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Optivity Telephony Manager: System Administration

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Section 1 Introduction

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About this document

Subject

Optivity Telephony Manager (OTM) is designed for managers of telecommunications equipment and authorized Nortel distributors. OTM provides a single point of access for management of Nortel systems. OTM uses IP technology to target:

- single point of connectivity to systems and related devices
- data collection for traffic and billing records
- collection, processing, distribution, and notification for alarms and events
- data entry and propagation (employee names and telephone numbers shared in multiple databases)
- Windows® and web-based management applications

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 4.0 software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel home page:

http://www.nortel.com/

Applicable systems

This document applies to the following systems:

- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet
- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 61C CP PII
- Meridian 1 PBX 81

- Meridian 1 PBX 81C
- Meridian 1 PBX 81C CP PII
- Communication Server 1000S (CS 1000S)
- Communication Server 1000M Chassis (CS 1000M Chassis)
- Communication Server 1000M Cabinet (CS 1000M Cabinet)
- Communication Server 1000M Half Group (CS 1000M HG)
- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Communication Server 1000E (CS 1000E).

Note: When upgrading software, memory upgrades may be required on the Signaling Server, the Call Server, or both.

System migration

When particular Meridian 1 systems are upgraded to run CS 1000 Release 4.0 software and configured to include a Signaling Server, they become CS 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a CS 1000M system.

Table 1
Meridian 1 systems to CS 1000M systems

This Meridian 1 system...	Maps to this CS 1000M system
Meridian 1 PBX 11C Chassis	CS 1000M Chassis
Meridian 1 PBX 11C Cabinet	CS 1000M Cabinet
Meridian 1 PBX 51C	CS 1000M Half Group
Meridian 1 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 61C CP PII	CS 1000M Single Group
Meridian 1 PBX 81	CS 1000M Multi Group
Meridian 1 PBX 81C	CS 1000M Multi Group
Meridian 1 PBX 81C CP PII	CS 1000M Multi Group

For more information, see one or more of the following NTPs:

- *Communication Server 1000M and Meridian 1: Small System Upgrade Procedures* (553-3011-258)

- *Communication Server 1000M and Meridian 1: Large System Upgrade Procedures* (553-3021-258)
- *Communication Server 1000S: Upgrade Procedures* (553-3031-258)

Installing OTM software

Refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) to install and configure OTM 2.2 software on a system.

Intended audience

This document is intended for CS 1000 and Meridian 1system administrators using a Microsoft Windows-based PC for management activities. It assumes that you have the following background:

- Working knowledge of the Windows ® 2000 Server,Windows 2000 professional, and Windows XP Professional operating system
- Familiarity with CS 1000 and Meridian 1system management activities
- Knowledge of general telecommunications concepts
- Experience with windowing systems or graphical user interfaces (GUIs)
- Knowledge of Internet Protocol (IP)

Conventions

Terminology

In this document, the following systems are referred to generically as “system”:

- Meridian 1
- Communication Server 1000S (CS 1000S)*****
- Communication Server 1000M (CS 1000M)*****
- Communication Server 1000E (CS 1000E)*****

The following systems are referred to generically as “Small System”:

- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet

- Communication Server 1000M Chassis (CS 1000M Chassis)*
- Communication Server 1000M Chassis (CS 1000M Cabinet)*

The following systems are referred to generically as “Large System”:

- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 61C CP PII
- Meridian 1 PBX 81
- Meridian 1 PBX 81C
- Meridian 1 PBX 81C CP PII
- Communication Server 1000M Half Group (CS 1000M HG)*
- Communication Server 1000M Single Group (CS 1000M SG)*
- Communication Server 1000M Multi Group (CS 1000M MG)*

* Systems that are referred to as “CS 1000”

IMPORTANT!

For Communication Server 1000 Release 4.0, many terms have been rebranded. However, in this document, some rebranded terms have not been used (they appear as they did for Succession 1000 Release 3.0). See Table 2 for a list of rebranded terms that are not used in this document.

Table 2
Rebranded CS 1000 Release 4.0 terms that are not used in this document

Term used in this document	CS 1000 Release 4.5 term
Optivity NMS (ONMS)	Enterprise Network Management System
Peripheral Equipment (PE)	Intelligent Peripheral Equipment
Media Gateway	Media Gateway 1000S (MG 1000S)

Text conventions

In this document, the following text conventions are used:

angle brackets (< >)	Indicate that you must input command text. Choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. **Example:** If the command syntax is `chg suppress_alarm <n>` where *n* is 0 = all, 1 = minor, 2 = major, 3 = critical, you enter `chg suppress_alarm 3` to suppress all alarms except critical alarms.
bold Courier text	Indicates command names, options, and text. **Example:** Enter **`prt open_alarm`**.
italic text	Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore. **Example:** For additional information, refer to *Using Optivity Telephony Manager*.
`plain Courier text`	Indicates command syntax and system output, for example, prompts and system messages. **Example:** `Open Alarm destination #0 is 47.82.40.237`
separator (>)	Shows menu paths. **Example:** Select **Utilities > Backup** in the Navigator window.

Acronyms

The following are some of the acronyms used in this document:

ASP	active server page
CPND	call party name display
CLI	command line interface
CRS	consolidated reporting system
CSV	comma separated values
DBA	data buffering and access

DN	directory number
ELAN	embedded local area network
ESN	electronic switched network
GCAS	general cost allocation system
GUI	graphical user interface
IP	internet protocol
ITG	internet telephony gateway
LAN	local area network
LDAP	lightweight directory access protocol
LDN	local dialing number
MARP	multiple appearance redirection prime
MAT	meridian administration tools
NMS	network management system
OTM	optivity telephony manager
PPP	point to point protocol
PTY	pseudo-TTY (network port)
RAS	remote access server
RU	reporting unit
TBS	telecom billing system
TLAN	telephony local area network
TN	terminal number
TTY	teletype (serial port)
uid	unique identifier in LDAP synchronization
V & H	vertical and horizontal
VLAN	virtual local area network

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

- *Meridian 1 Integrated Telephony Gateway Trunk 1.0/Basic Per-Trunk Signaling: Description, Installation, and Operation* (553-3001-116)

  Describes configuration and maintenance of the 8-port ITG trunk card.

- *Meridian 1 Integrated Telephony Gateway Line Card 1.0/IP Telecommuter: Description, Installation, and Operation* (553-3001-119)

  Describes configuration and maintenance of the IP line card for IP Telecommuter.

- *Optivity Telephony Manager: Installation and Configuration* (553-3001-230)

  Explains how to install and configure OTM 2.2 software on a system.

- *Features and Services* (553-3001-306)

  Describes features associated with systems. For each feature, information is provided on feature implementation, feature operation, and interaction between features.

- *Software Input/Output: Administration* (553-3001-311)

  Describes the prompts and responses for a system's command line interface (CLI). This guide includes information on overlay programs that are classified as administration overlays.

- *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331)

  Provides information on the following optional telemanagement applications; Telecom Billing System (TBS), TBS Web Reporting, General Cost Allocation System (GCAS), Consolidated Reporting System (CRS), and Consolidated Call Cost Reports (CCCR).

- *IP Trunk: Description, Installation, and Operation* (553-3001-363)

  Describes configuration and maintenance of the 24-port ITG trunk card. This card appears as a 24-port trunk card with ISDN Signaling Link (ISL) and D-channel signaling.

- *IP Line: Description, Installation, and Operation* (553-3001-365)

  Describes configuration and maintenance of gateway cards.

- *Telephones and Consoles: Description, Installation, and Operation* (553-3001-367)

  Describes telephones and related features. The telephones provide access to an OTM-generated Corporate Directory.

- *DECT: Description, Planning, Installation, and Operation* (553-3001-370)

  Provides an overview of OTM for Nortel Integrated DECT (DECT) systems.

- *Software Input/Output: System Messages* (553-3001-411)

  Describes the meaning of system messages.

- *Software Input/Output: Maintenance* (553-3001-511)

  Describes the prompts and responses for a system's command line interface (CLI). This guide includes information on overlay programs that are classified as maintenance overlays.

- *Communication Server 1000M and Meridian 1: Large System Installation and Configuration* (553-3021-210)

  Provides information on the Survivable IP Expansion (SIPE) feature for a Meridian 1 Large System.

- *Communication Server 1000S: Installation and Configuration* (553-3031-210)

  Provides information on the Survivable IP Expansion (SIPE) feature for CS 1000S systems. Describes the meaning of the messages generated by the CS 1000S system.

- *SRG Configuration Guide (Survivable Remote Gateway) - SRG software version 1.0* (P0609195)

  Provides information on how to setup and configure a Survivable Remote Gateway (SRG) system for an IP network.

- *Succession 1000/M Main Office Configuration for SRG - Succession software version 3*.0 (P0609617)

  Provides an overview of Succession programming to support the Survivable Remote Gateway (SRG) as a branch office.

Online

To access Nortel documentation online, click the **Technical Documentation** link under **Support** on the Nortel home page:

http://www.nortel.com/

CD-ROM

To obtain Nortel documentation on CD-ROM, contact your Nortel customer representative.

About OTM

A single point of management

Optivity Telephony Manager (OTM) provides a single point of access and control for system management. One OTM Windows Server replaces multiple buffer boxes, access modems, and terminal servers.

OTM uses IP technology to act as a single-point management server in the following areas:

- Data collection for call accounting, traffic, and billing records
- Collection, processing, distribution, and notification for alarms and events (CallPilot, ITG, CS 1000 and Meridian 1)
- Data entry and propagation (employee names and telephone numbers shared in multiple databases)

OTM acts as a terminal server for multiple devices by providing Windows and web-based management applications.

Windows server

OTM contains the following administration tools:

- Windows Navigator
- List Manager
- Electronic Switched Newtork (ESN)
- Traffic Analysis module
- Call Tracking application
- Corporate Directory
- IP Telephony Gateway applications
- Inventory

- Maintenance Windows
- Alarm Notification

OTM includes the following Windows-based applications:

- Enhanced Station Administration/Call Party Name Display (CPND)
- Directory Service with Lightweight Directory Access Protocol (LDAP) support
- Telecom Billing System (TBS)
- Data Buffering and Access (DBA)
- Call Tracking
- General Cost Allocation System (GCAS)
- Consolidated Reporting System (CRS)
- Consolidated Call Cost Reports (CCCR)

Windows Navigator overview

Windows Navigator provides access to:

- Common services
- Utilities
- Station administration
- Alarm management
- Maintenance applications

Common services

Services are management applications used to set and maintain the OTM system. System window launches the following applications (some of these applications are purchased separately):

- Alarm Banner
- Events
- System Terminal (Ethernet or Point to Point Protocol (PPP)
- System Terminal VT220 (serial)
- Station Administration
- Traffic Analysis
- Telecom Billing System
- Call Tracking
- ESN Analysis and Reporting Tool
- Maintenance Windows
- Inventory
- LDAP Synchronization
- General Cost Allocation System (GCAS)
- Consolidated Reporting System (CRS)
- Consolidated Call Cost Reports (CCCR)

The following OTM applications provide configuration and maintenance for the IP Telephony Gateway (ITG) cards.

- ITG IP Phones

  This application is used to configure and maintain the ITG gateway card for IP Phones. The IP Phones are connected to a system through an IPE-to-ITG gateway card. The configuration of IP Phones is accomplished through the Station Administration application in OTM. For more information, refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

- ITG IP Telecommuter / e-Mobility

  This application is used to configure and maintain the ITG line card for IP Telecommuter. This application is used to configure the IP Line gateway and the gatekeeper, but not the H.323 IP terminal or PC-based software client. For more information, refer to *Meridian 1 Integrated Telephony Gateway Line Card 1.0/IP Telecommuter: Description, Installation, and Operation* (553-3001-119).

  This application is also used for the configuration and maintenance of the ITG line card for wireless service. For more information, refer to *WLAN IP Telephony: Installation and Configuration* (553-3001-304).

- ITG ISDN IP Trunks

  This application is used to configure and maintain the 24-port or 32-port ITG trunk card that resides in the IPE shelf. The card appears to the switch as a trunk card with ISDN Signaling Link (ISL) and D-channel signaling. The card has a 10/100 baseT connection to carry packetized voice and fax calls over IP data networks. For more information refer to *IP Trunk: Description, Installation, and Operation* (553-3001-363), and *Addendum to Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (P0941974).

- IP Line 3.0

  This application is used to configure and maintain the 32-port Media Card and the Voice Gateway Media Card. For more information, refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

- ITG M1 IP Trunks

  This application is used to configure and maintain the 8-port ITG (trunk) card that resides in an IPE shelf. The card has a 10/100 baseT connection to carry packetized voice and fax calls over IP data networks, and can serve as a toll bypass to the traditional PSTN. For more information, refer to *Meridian 1 Integrated Telephony Gateway Trunk 1.0/Basic Per-Trunk Signaling: Description, Installation, and Operation* (553-3001-116).

Utilities

Utilities are application tools used to control and maintain the movement of data in OTM application.

Scheduler

The Scheduler schedules an Optivity Telephony Manager activity (or any Windows application activity) for processing at a later date and time. With Scheduler, you can define the intervals you want to run the activity. If there are multiple tasks in a job, you can assign the tasks in a sequential order using the queue function.

The Scheduler normally runs in background mode. This means that if an OTM application is due to run at a certain time, the Scheduler automatically runs it at that time without interrupting current sessions.

Import/Export

The Import and Export utilities are used to import and export data to and from the OTM database files. These tools enable you to share data between the OTM databases and other applications.

CAUTION — Service Interruption

Records exported by OTM that have the UserID field modified by another program (to any value other than no value) are not updated during an import by OTM. During Import, OTM does not update these modified records but creates new records.

The following are examples of situations in which the Import and Export utilities are useful:

- If you are installing a system, and already have a source that contains user data (i.e., Names, Departments, Managers), you may import these fields into the OTM Directory. You can then use Station Administration to assign telephones to the imported user records.
- Synchronize with an LDAP database to complete the unique identifier (UID) fields.
- The OTM Directory can be exported for external telephone book generation or for importing into other external databases.

Compact and Repair

Use the Compact and Repair utility to compact or repair the OTM database files for specific sites and systems. This utility compacts or repairs any Microsoft Access format database files of the same version as OTM (for example, Access 97).

The following are two common reasons to compact database files:

- Increase in size

  CDR data that is accessed by OTM Telecom Billing System and OTM Directory is stored in database files. These database files grow as records are added and deleted. Periodically, the database files should be compacted to increase access performance. This is especially true of very active files, such as CDR database files.

- File fragmentation

  As you update the OTM databases, the files can become fragmented and use more disk space than necessary. Use the Compact command to compact these databases and optimize the disk space used by these database files. Compacted databases can often be accessed more quickly. This saves time and system resources when you perform such operations as database backups.

In some cases, the OTM databases can become corrupted and may no longer be accessible by the OTM applications. Use the Repair command to repair these databases so they can be accessed by these applications.

Station administration

OTM Station Administration enables creation, maintenance, change, and reporting of single and multi-line station data and Call Party Name Display (CPND) information.

Stations

Each system has a number of stations. You can set up each station individually. In practice, many stations have features in common. All features of any station can be set individually, or in groups with common criteria.

Station data

Station data defines the setup for each user (telephone) connected to the system.

Station data is collected from the system, or created within OTM. You change this data within OTM and upload it to update the database.

OTM Directory Services

The OTM Directory is a database for storing employee and organizational data. Portions of this data are shared with the Station Administration and Telecom Billing System applications.

The OTM Directory contains the following employee attributes:

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Department
- Manager
- E-mail address
- Mailing address

- List of telephone extensions
- LDAP Unique Identifier (UID)
- LDAP UID is used to link an OTM Directory entry to a Corporate LDAP Directory entry. The linkage is done using LDAP synchronization utility or import. Refer to "LDAP synchronization" on page 310 for further details.
- Additional information on each telephone extension

The Station database stores the following employee attributes for telephones:

- Employee first and last name
- Department

The Station Administration module

The Station Administration module enables you to create many stations with identical features using templates. However, those features that can be considered unique for a station (such as Directory Number (DN), Telephone Number (TN), name, and location) are accessible through a dialog box that graphically represents the appearance of the instrument at that station. All other features are accessible from this dialog box through function buttons.

The Station Administration application contains the following:

- Call Party Name Display

  Manages Call Party Name Display (CPND) data.

- List Manager

  Manages data for Speed Call, Group Call, and Group Hunt lists.

- Voice Mailbox

  Add/change/delete stations, and change DNs.

- Global Update

  Change common data values in the main application window (Station list or CPND list) either directly or through a confirmation option.

- Communicating with CS 1000 and Meridian 1

  Synchronize system data to copy OTM data to systems, and to copy system data to OTM. Download to update the OTM database with selected data from the system. Retrieve all data (station or CPND) that pertains to a single customer in the system. Upload to update the system data block with selected data from the OTM database. View communication logs.

- Conversion utility

  Rebuild station data to the current OTM file structure. Import station data from other applications.

- Generating Reports

  Create, view, print, and change custom reports.

- OTM File Viewer

  Browse, print, and save OTM files accessed during Station Administration tasks.

- Designing Report Forms

  Design and customize a report using the current database, insert sections into a form, and define section parameters.

- Edit a form

  Set report parameters.

- Templates

  Add or modify groups of stations quickly (as when establishing a new system).

Alarm management

OTM alarm management provides an alarm collection and processing center for multiple systems and devices. OTM receives SNMP traps from systems (such as the CS 1000M and CallPilot) and stores them in a circular log file on the OTM Server. The OTM Alarm Notification application monitors the incoming traps and notifies the appropriate people of important events and alarms.

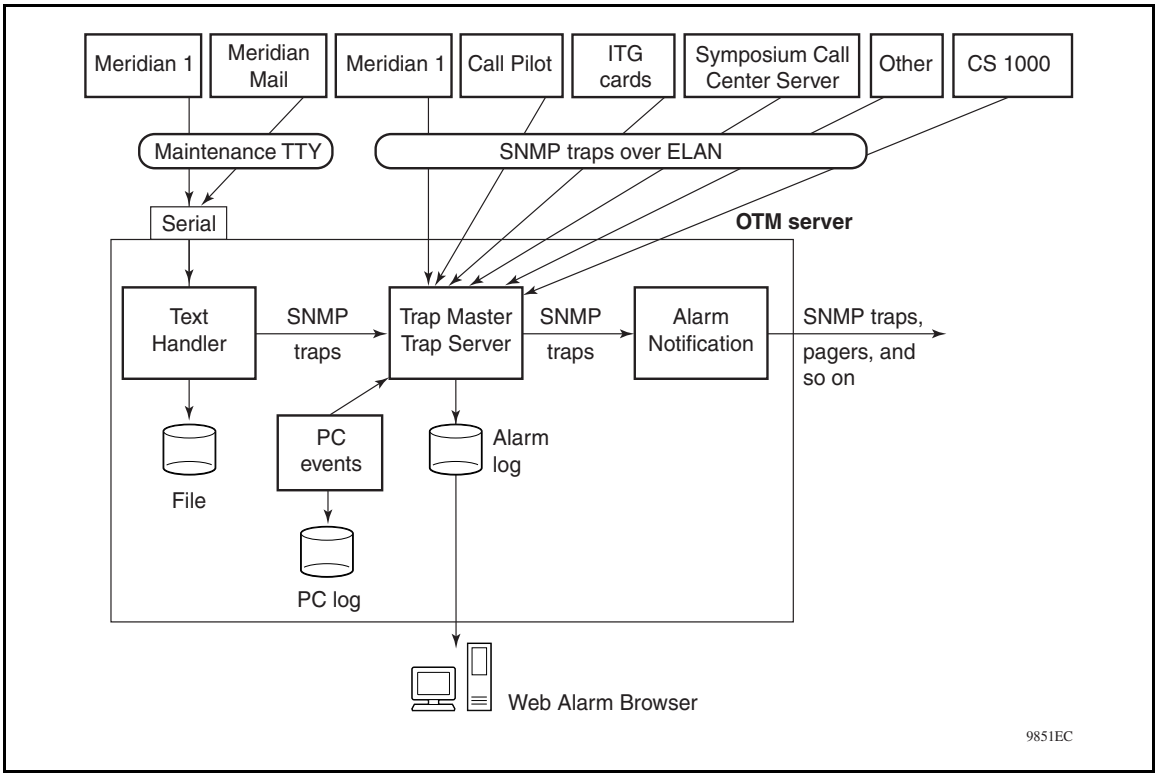
Alarm management components

OTM alarm management contains the following components:

- A web-based alarm browser server that supports the viewing of alarms from multiple systems and devices. HTML Help is provided for individual alarms.
- A Windows alarm browser (Event Monitor) you use to view system-specific alarms. Windows Help is provided for individual alarms.
- An Alarm Notification application that provides a scripting language to generate notifications on selected incoming traps. Notification types include pagers, e-mail, and the forwarding of SNMP traps to an upstream processor (such as Optivity NMS). Notification is triggered by trap data, such as alarm severity, device type, and time of day. A Script Wizard application simplifies the creation of Alarm Notification scripts.
- A Text Handler application that parses maintenance TTY output and generates traps on selected error messages. This is intended primarily for legacy Meridian 1 systems (Release 21 and earlier) and Meridian Mail systems that cannot generate traps. Text Handler rules can be created by the user to support other serial devices.
- A PC Event Log and Viewer for viewing events and alarms generated on the OTM Server and all of its Windows clients. This Windows application can also generate SNMP traps based on the event severity level.

Figure 1 on page 72 shows the main components of OTM alarm management. The Trap Master is responsible for handling the SNMP traps from the systems and storing it on the server for retrieval by the Alarm Browser client. The Trap Server distributes traps to applications registered to receive traps, such as Alarm Notification.

Figure 1
OTM alarm management main components



Maintenance applications

CS 1000 and Meridian 1 systems have over 600 overlay-based maintenance commands that support their capabilities. OTM Maintenance Windows eliminate the need to remember or look up any overlay-based commands. The 37 Maintenance Overlays are grouped into 8 hardware-related windows to allow you to perform all maintenance tasks. The interface provides a comprehensive view of system hardware configuration with the following benefits:

- See the equipped hardware at a glance.
  The hardware list works like a spreadsheet data view—you can scroll through the list, sort the list, and select items for changing.
- Select an item from the list and apply a maintenance command from the right mouse-button pop-up window.
- Print the list or copy it to a spreadsheet.
- Select a TN or DN and print the TN/DN block.
- See Enabled/Disabled status in real time.

Traffic analysis

Traffic analysis performs the following functions:

- Collects traffic data from a specific system
- Maintains a database of collected traffic data
- Defines report and graph parameters
- Generates reports to extract significant information from raw traffic data, such as trunk usage, peak periods, process loads, and junctor and loop traffic

ESN Analysis and Reporting Tool (ART)

Electronic Switched Network (ESN) is a private network application. The ESN Analysis and Reporting Tool (ESN ART) is an OTM application designed to:

- Configure, analyze, and manage large and complex ESN databases.
- Retrieve the ESN configuration from a system.
- Convert the overlay-based data into a PC database. Use the Windows user interface to easily view, modify, and print the data.

Web Navigator

Overview

The OTM Web Navigator provides the following:

- A list of systems and devices; users click on a system or device to:
  - Open a Web System Terminal or URL to manage a system or device

  - Open Maintenance Pages for performing maintenance operations on hardware
- Web-based alarm browser to view alarms and events from multiple systems and devices
- The ability to locate telephones, view and change configuration data
- Web-based Maintenance Pages to perform maintenance operations (enable, disable, and so on) on system hardware
- OTM web configuration pages (login access, LDAP sync reports, and so on)

Equipment

- Monitor the availability and status of applications and systems on the OTM server
- Monitor alarms on the OTM server
- Access the Terminal Server through the Web Virtual System terminal
- Perform maintenance operations on Web Navigator.

Web station

- Find telephones and administrate tasks on telephones
- Update Users on OTM Directory pages
- Synchronize changes made in Web station with information stored on a system.

Web administration

- Customize Help text for OTM web-based applications
- Authenticate OTM users
- Assign and administer user groups
- Administer login security in the Session Monitor
- Select a Language

Web Desktop Services

- Install and configure Desktop Services

Section 2
Windows Navigator

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Using Windows Navigator

Logging on to Windows Navigator

Utilizing the Microsoft Windows interface, OTM Windows Navigator displays and launches all systems available to the current user.

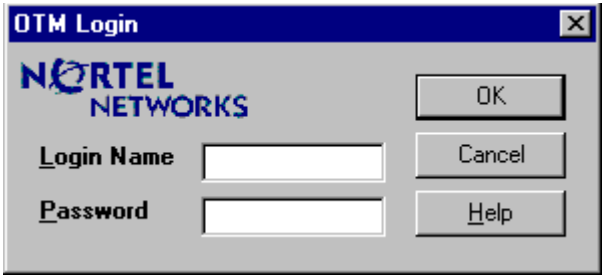
IMPORTANT!

The users logging into the machine running OTM should have full local admin rights and their access should not be restricted by policies enforced on the machine.

Procedure 1
To Log on and launch Windows Navigator:

1 From **Start> Programs > Optivity Telephony Manager >** click **OTM Navigator**. The login dialog box appears. See Figure 2.

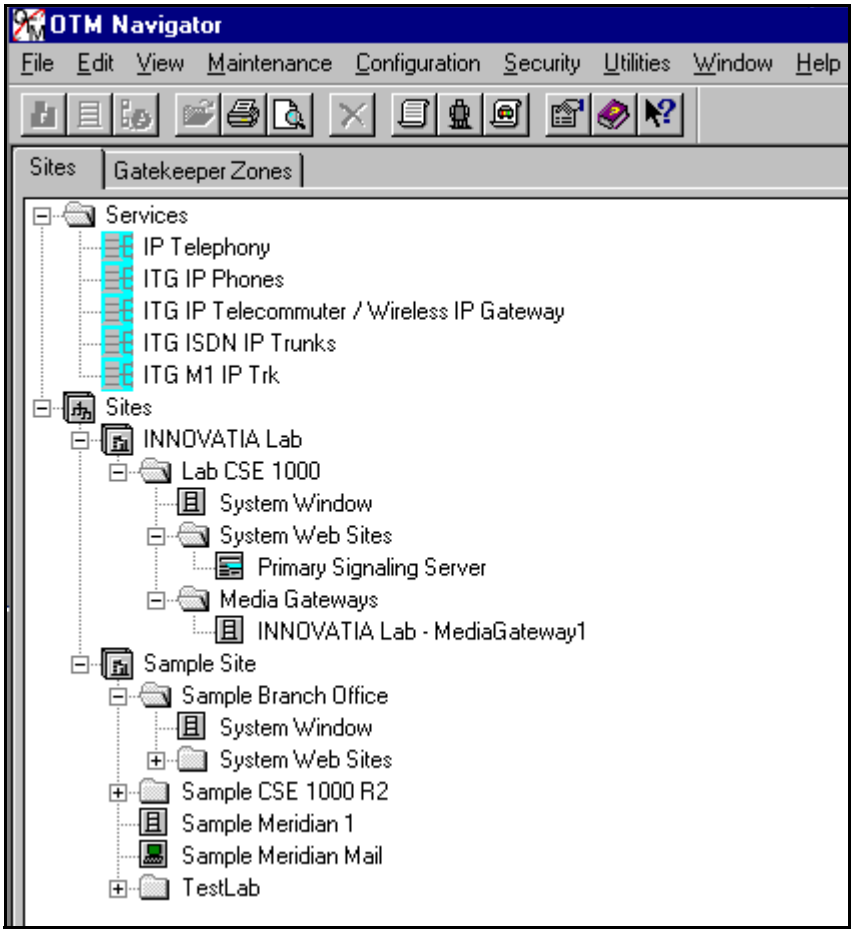
Figure 2
Login dialog box



2 Enter your login name and password, and click **OK**.

The OTM Windows Navigator window appears (Figure 3 on page 78).

Figure 3
OTM Windows Navigator window



End of Procedure

Using Navigator menu commands

OTM services and sites are controlled and configured through the following set of Navigator menus.

Windows

The Windows menus (Figure 4), located at the top of the Navigator window, contain the main set of commands needed to use the applications in OTM Navigator.

For the full set of Windows commands see Table 3 on page 80.

Figure 4
Windows menus

Toolbar

Just below the Window menus, the Toolbar menu (Figure 5) is an alternate menu for some of the commands used in Navigator. The function of each button in the Toolbar displays when you move the mouse over the button.

For a full set of Toolbar commands see Table 3 on page 80.

Figure 5
Toolbar

Shortcut Key

Your keyboard also provides alternatives for executing a number of commands in the Windows File, Edit, and Help menus.

For a full set of Shortcut Key commands see Table 3 on page 80.

Table 3
Menu Commands (Part 1 of 5)

Window menus	Toolbar menu	Shortcut key
File		
Open		Ctrl+O
Opens the System window for the system selected in the Navigator.		
Print		Ctrl+P
Prints detailed information for a selected site or system. If you select the Navigator icon, this command prints information for all sites and systems in the window.		
Print Preview		
Displays the default report for selected sites and systems. You can scroll through the report to review information and then print it if you choose.		
Print setup		
Enables you to select a printer and a printer connection.		
Reports		Ctrl+R
Displays the list of available reports for sites and systems. You can preview or print a selected report.		
Properties		
Displays current information for the selected site or system. If you have administrator privileges, you can change this information.		
Exit		
Disconnects from all systems, closes related windows, and logs you out of OTM. You can terminate OTM immediately or let OTM run in the background so that it can complete scheduled tasks.		
Edit		
Delete		Delete
Removes the selected site or system from the Navigator window. Delete icon, the selected site or system is deleted .		
You must have administrator privileges to use the Delete command.		

Table 3
Menu Commands (Part 2 of 5)

Window menus	Toolbar menu	Shortcut key
View		
Toolbar		
Displays or hides the toolbar. A checkmark appears next to the menu item when the toolbar is displayed.		
Status Bar		
Displays or hides the status bar. A checkmark appears next to the menu item when the status bar is displayed.		
Maintenance		
Event Log Viewer		
Displays the PC Events Log, which includes login and logout events, application selection, connection failures, security violations and application failures.		
Configuration		
Add Site		
Enables you to add a new site to the Navigator window. You must have administrator privileges to use the Add Site command.		
Add System		
Allows you to add a new system to a site in the Navigator window. You must have administrator privileges to use the Add System command.		
Move System		
Enables you to move the selected system to another site. System users are provided write access to the new site if they did not previously have access to it. If there are scheduled events pending for the system, you must delete the events manually and re-schedule the events after the move. You must have administrator privileges to use the Move System command.		
System Modem Scripts		

Table 3
Menu Commands (Part 3 of 5)

Window menus	Toolbar menu	Shortcut key
Displays the list of available modem scripts and enables you to define new scripts. Once defined, you can apply a script to a system so that it executes each time you try to connect to the system.		
Event Notification		
Enables you to set an audible tone (beep) to sound when a new critical alarm occurs in the Events window.		
OTM Regional Setting		
Enables you to enter information about local currencies to display proper cost values in report summaries.		
Gatekeeper Zone Manager		
Enables you to manage Gatekeepers.		
Security		
Users		
Displays the list of current users and allows you to modify user information or User Groups assigned to a user. You must have administrator privileges to use the Users command.		
User Groups		
Opens the User Groups window, where you can define properties for different user groups, and assign users to each group.		
User Authentication		
Enables you to authenticate users.		
Change Password		
Enables you to change passwords		
Utilities		
Scheduler		
Displays scheduled tasks and allows you to delete a task you have scheduled. If you have administrator privileges, you can reorder or delete any task.		

Table 3
Menu Commands (Part 4 of 5)

Window menus	Toolbar menu	Shortcut key
Backup		
Backs up application and system data from the PC to a backup file. Use the backup to restore data when needed. You can back up all data, or data for a single site or system. A wizard guides you through the backup process.		
Restore		
Restores application and system data from the backup file to the PC. You can restore all data, or data for a single site or system. You can choose whether you want to overwrite system property data. A Wizard guides you through the restore process..		
Corporate Directory		
Enables you to define and generate reports based on Station Administration data across all sites and systems. You can display a report, print the report, or save the report to a file. You can also schedule report generation to take place at a specified date and time. Corporate Directory requires both the Station Administration and Microsoft Excel applications.		
LDAP Setup & Logs		
Enables you to set up communications with an LDAP directory server. LDAP synchronization allows you to synchronize directory data (User Names, Department Number, Directory Number , and so on.) between an LDAP Directory Server and directory data in OTM.		
Alarm Notification		
Opens the Alarm Notification application which allows you to monitor alarms and process alarm notifications.		
Data Buffering & Access		
Opens the Data Buffering & Access application that allows you to store CDR, Traffic, or serial data on the PC. You can back up and restore the PBX database files.		
Consolidated Call Cost Reports		

Table 3
Menu Commands (Part 5 of 5)

Window menus	Toolbar menu	Shortcut key
Opens the Consolidated Call Cost Reports window. Allows you to create detailed reports about telephone system usage.		
Clients		
Opens the Clients dialog box, which lists all of the OTM clients installed on the OTM server.		
Window		
Arrange		
Arranges all system-related windows into a partially overlapping pattern for easy access.		
Help		
Help Topics		F1
Displays the list of Help topics.		
What's This?		Shift+F1
Changes the cursor to and displays Help on the next item you select.		
TN Licenses		
Counts TN licenses used.		
About OTM Navigator		
Displays release information for the Navigator.		
About Applications		
Displays keycode, installed applications and patch information.		

Status bar

A status bar is located at the bottom of the window.

To display the Status Bar: Select the *Status Bar* link in the View menu.

The status bar describes actions of the menu commands as you use the mouse to navigate through menus. It also describes the actions of the Toolbar buttons as you press them. When you choose a menu command, the status bar describes the progress of the command while it executes. For example, the status bar shows Printing text when you choose Print from the File menu.

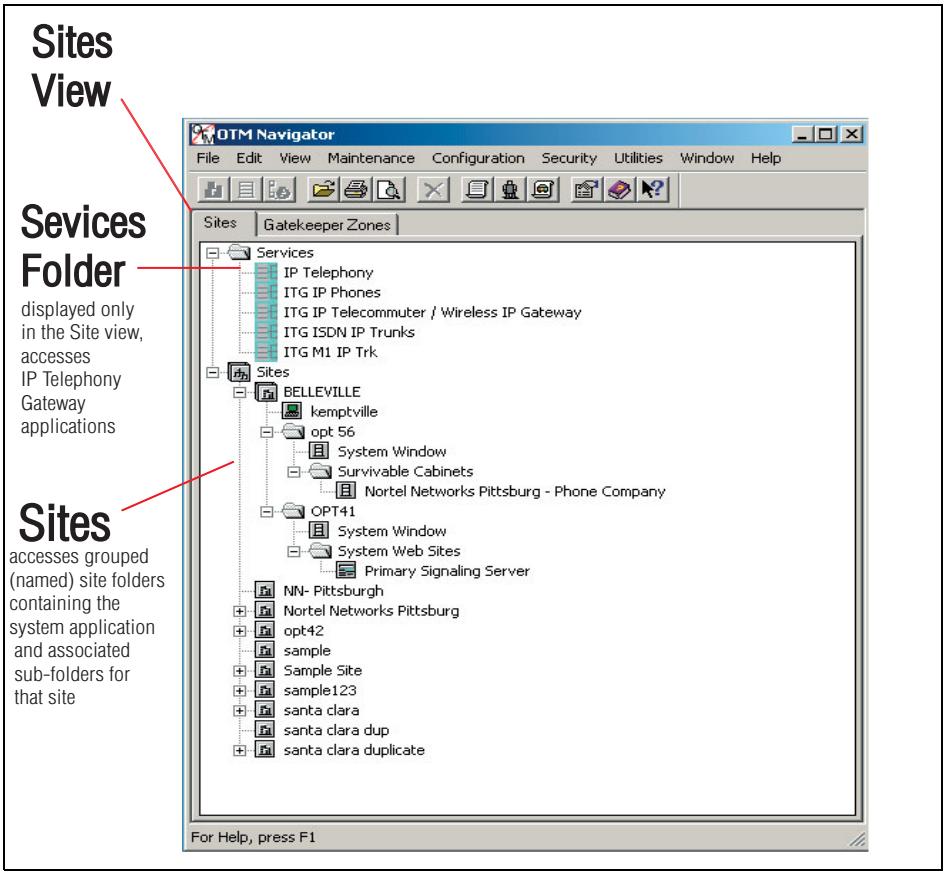
Navigator views

The Navigator window displays OTM systems in the following two views:

- Site View
- Gatekeeper Zones View

Navigator enables you to group the systems into sites for more convenient access (Figure 6 on page 86).

Figure 6
OTM Windows Navigator—Sites view



Services

The Services folder, displayed only in the Site view, accesses the following IP Telephony Gateway applications:

- IP Telephony
- ITG IP Phones
- ITG IP Telecommuter/Wireless IP Gateway
- ITG ISDN IP Trunks
- ITG M1 IP Trk

Site folders

The *Site* icon accesses grouped (named) site folders containing the system application and associated sub-folders for that site.

To open a site, double-click the site name or click the plus sign (+) next to the site.

System Window

The *System Window* application opens the system window containing the suite of applications for that system. Figure 9 on page 91.

To open the System Window,double-click **System Window** icon to launch the OTM system window for that system.

System website (sub-folder)

The System website folder is displayed only when **Signaling Server present** checkbox is selected in network page of Windows System properties

Double-click **System Web Site**s icon to launch the Element Management web pages on the associated Signaling Server

Access to the Command Line Interface (CLI) on the Signaling Server is not included in the tree. You can create a generic system for this purpose.

Media Gateway (sub-folder)

The Media Gateway name is composed of the Site and the system name.

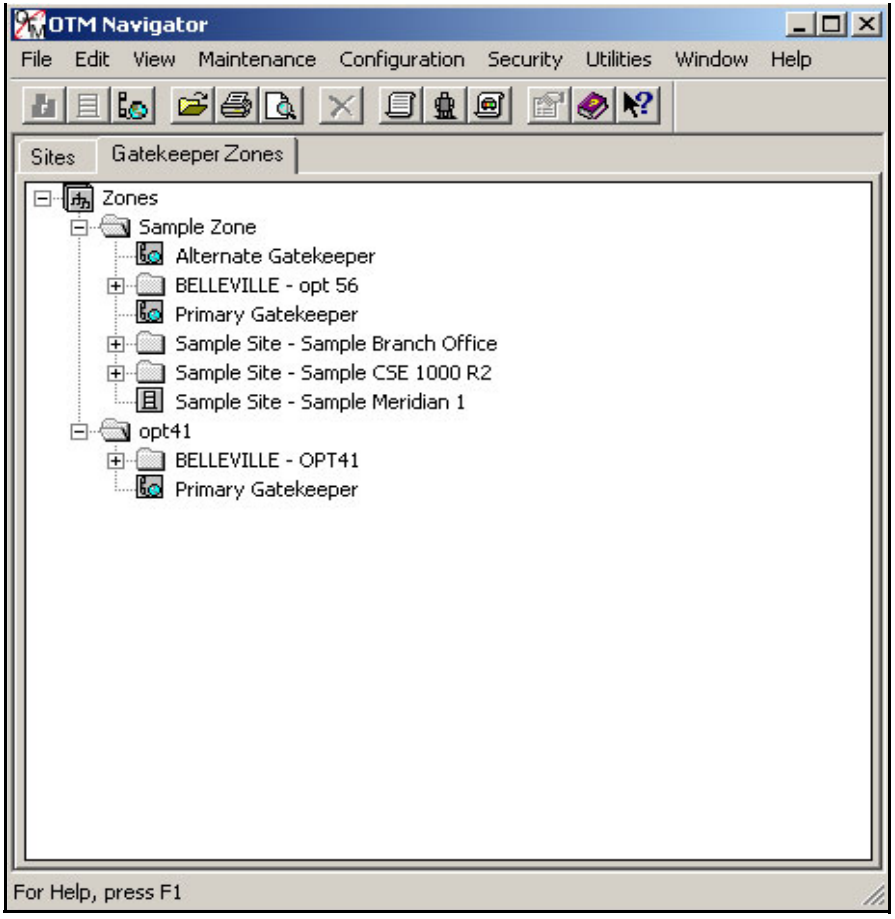
Survivable Cabinets/Media Gateways - This folder is shown only if the hardware is Meridian 1 PBX 11C Chassis and at least one survivable cabinet/media gateway is configured for the system

Double-click a gatekeeper to launch the associated management web page

Gatekeeper Zone view

A gatekeeper provides endpoint management, including registration and unregistration, authentication, address resolution (DN-to-IP and endpoint-to-gateway), and maintains a list of endpoints currently active on the network (Figure 7). Each gatekeeper controls one H.323 zone; each H.323 zone consists of many H.323 IP clients. For more information on gatekeepers and gatekeeper zones, see *Meridian 1 Integrated Telephony Gateway Line Card 1.0/IP Telecommuter: Description, Installation, and Operation* (553-3001-119).

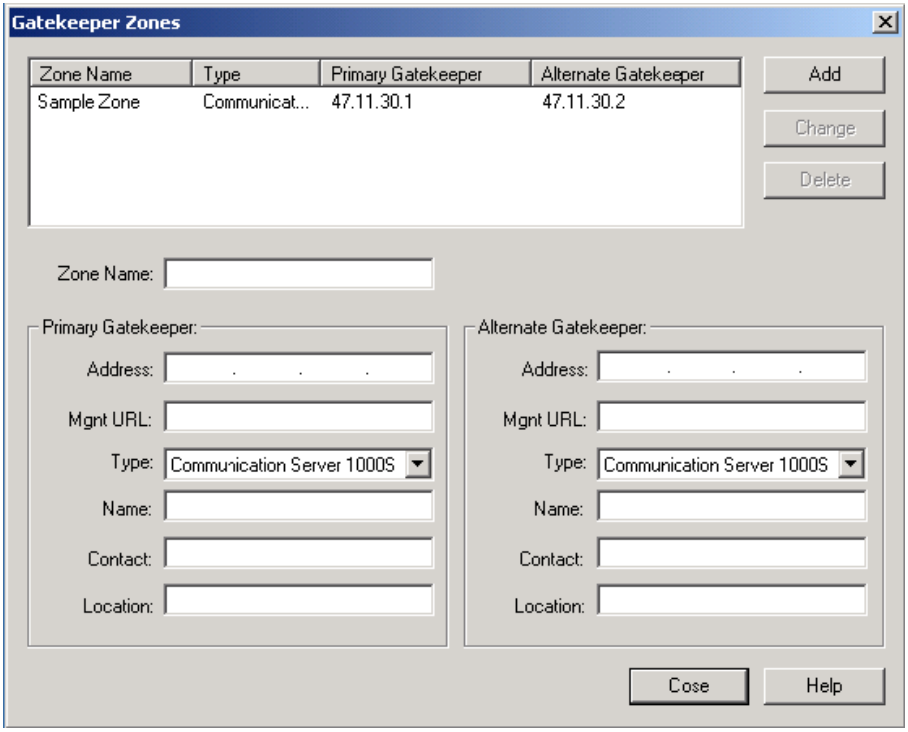
Figure 7
OTM Windows Navigator—Gatekeeper Zones view



The Gatekeeper Management URL (web interface) serves both the H.323 Gatekeeper and the SIP Proxy/Redirection Server. The default Gatekeeper Management URL,

populated by OTM on the Gatekeeper Zones page (Figure 8 on page 89), must be changed to the new Network Routing Services (NRS) web URL for Releases 4.0 and later.

Figure 8
Gatekeeper Zones Page



Zone Folder

The Zone Folder accesses Gatekeepers and a Site folder.

To open a Gatekeeper Zone, double-click a name or click the plus sign (+) next to the zone.

Gatekeepers are accessed only in the Gatekeepers Zones view. Systems equipped with IP applications that support gatekeeper operation can be assigned to a gatekeeper zone.OTM displays gatekeepers in the following ways:

- Media Gateways display within the Media Gateways folder of the associated system.
- Survivable IP Expansion Cabinets display only within the Survivable cabinets folder of the associated Small System.
- OTM does not display the survivable status of Media Gateways, Survivable IP Expansion cabinets, and Gatekeepers (Primary/Alternate/Out of Service).

To open a Gatekeeper, double-click a Gatekeeper to launch the associated management web page.

Site (sub-folder)

The Gatekeeper Zone Site folder contains the same sub-folders as in the Sites view

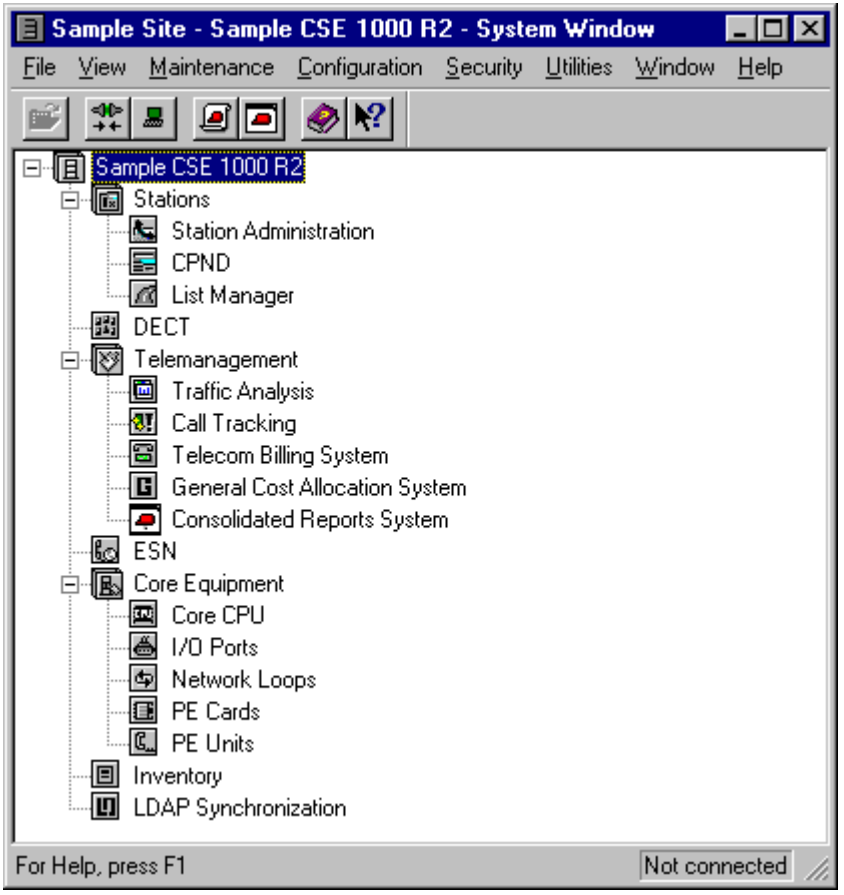
(See "Site folders" on page 87).

Components in CS 1000 and Meridian 1 systems appear in the system window. OTM displays a terminal emulation window for systems defined as "Generic."

Using the System Window

From OTM Navigator, double-click the system on which you want to work. The System Window for that system appears (Figure 9).

Figure 9
System Window



Common services

Migrating User Templates from OTM 1.2 to User Groups

The migration from User Templates to User Groups has required that several changes be made to existing users profiles and access privileges. This section highlights these changes.

During the installation process, all users who were assigned to the Administration template in earlier releases of OTM are migrated to the Administrators user group. The old Administration template is deleted. Only users who were assigned to the Administration template in the OTM Users window are migrated automatically. Administration template users in the OTM Directory must be updated manually after the upgrade.

Use the Directory Update feature to find all users assigned to the Administration user group, and perform a global change to migrate them to the Administrators user group. See “Directory Update” on page 831 for more information.

This change only impacts access to end user web pages.

The HelpDesk, EndUser, and Default user groups are migrated to the newer version of OTM with their web access rights preserved. Windows access rights for these groups are assigned the default values described in the section “User groups provided with OTM in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230)

Any new telephone features are assigned Read/Write access for members of the Administrators user group. These new features are “hidden” for members of all other user groups.

All other templates that you may have created in earlier versions of OTM are migrated to user groups in the new version with the Windows access rights preserved. In OTM 2.0 and earlier, all access rights to web applications for these users are set to NoAccess. Entries are created for these users in the Web Station database for telephone access; however, the access rights for the members of these groups are set to NoAccess.

In early versions of OTM, access rights did not exist for the IP Gateway applications. All users had Read/Write access to these applications. When migrating a template from

an earlier version of OTM to a user group in the new version, the access rights for the IP Gateway applications are set to Read/Write for members of the Administrators user group and NoAccess for all other users.

The ADMIN user account from earlier versions of OTM is migrated with no restrictions. This account can be renamed, deleted, or modified.

During the migration process, if the same user or user group exists you receive a warning message with the options to either Ignore or Retry. If you select Ignore, the user or user group is not migrated. Alternatively, you may choose to manually delete the user or user group from the OS, and then select Retry to proceed with the migration.

Only the four Web Station administration access profiles from pre-Release 2.0 versions of OTM (Administrators, HelpDesk, EndUser, and Default) are migrated to become user groups.

User Group and OTM directory interactions

OTM is shipped with the following user groups and corresponding access rights:

Administrators

Full read/write access rights. Access rights cannot be changed for this user group.

HelpDesk

- Full access to all Web Navigator tree items except those under Web Administration.
- Full Access to Web Desktop Services, including read/write and synchronization capabilities.
- No access to Windows Navigator applications.

EndUser

- No access to web or Windows Navigator applications.
- Web Desktop Services is read-only. Only 21 features are available; the rest are hidden.

Default

No access.

Since user groups can be assigned to users in the OTM Directory, there are a number of interactions that you should be aware of when adding systems and user groups in the OTM Windows navigator:

- When you add a new system, the system's OTM Directory is created with the appropriate list of valid user groups.
- New user groups are added to the OTM Directory in all of the existing systems. While this process is taking place, you are presented with a message (Figure 10).

Figure 10
Synchronizing OTM Directory message

- When you rename a user group, OTM displays the Rename User Group dialog box (Figure 11).

Figure 11
Rename User Group dialog box

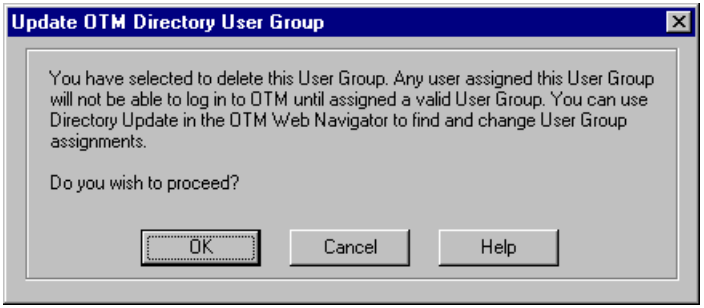
Update OTM Directory User Group
You have changed the User Group name. Users assigned to the old name will not be able to log in to OTM until assigned a valid User Group. You can use Directory Update in the OTM Web Navigator to find and change User Group assignments.
Do you wish to proceed?
OK
Cancel
Help

If you select **OK**, the informational message shown in Figure 10 appears.

If you select **Cancel**, the renaming of the user group is canceled.

When you delete a user group, OTM displays the Delete User Group dialog box (Figure 12).

Figure 12
Delete User Group dialog box


Update OTM Directory User Group
You have selected to delete this User Group. Any user assigned this User Group will not be able to log in to OTM until assigned a valid User Group. You can use Directory Update in the OTM Web Navigator to find and change User Group assignments.
Do you wish to proceed?
OK
Cancel
Help

If you click **OK**, the informational message shown in Figure 10 appears.

If you click **Cancel**, the user group is not deleted.

You can update a user group in the following ways:

- Use the Directory Update application in the Web Navigator to update the user group assignment for an individual user or a group of users. For information on using the Directory Update application, see "Directory Update" on page 831.
- Update a user-group assignment by going to the OTM directory entry for the user, and changing the user group manually. For information on manually updating a user-group assignment, see "Employee Editor" on page 166.

Authentication for Element Manager web applications

When accessing the Element Manager web application, the login name and password stored for Customer 0 in the System Properties of the CS 1000 system is used. If the login name and password are correct, the login page is bypassed. If the login name and password are incorrect, OTM displays the login page.

There is no automatic login to Gatekeeper management URLs.

Configuring sites and systems

Initial login on a Windows systems

Caution: To ensure security, you must change the default password after initial login. Follow the steps in this procedure to select a new password.

Windows users are authenticated using either a local account on the OTM Server, a Windows domain account, or LDAP. There is no default login name and password for these systems.

Any user account that is a member of the local Administrators group (Administrator for example, can always be able to log in to OTM. In a new OTM installation, use any local Administrators group account susch as Administrator for your initial log in.

Procedure 2
Set up additional users and user groups

1 Perform an intial login.

2 To add user groups, select **Security > User Groups** from the OTM Navigator window, and then select **Configuration > Add User Group...** from the User Groups window.

See “Creating a user group” in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for detailed instructions on adding OTM user groups.

3 To add users, select S**ecurity > Users** from the OTM Navigator window, and then select **Configuration > Add User...** from the OTM Users window. See”Adding a user” in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for detailed instructions on adding OTM users.

End of Procedure

Users that are not created from within OTM, such as the Administrator, do not appear in the OTM Users window.

Site and system administration

Sites and systems must be defined before users can connect to a system and perform maintenance tasks. A site typically represents a physical location containing one or more systems.

Systems are defined as Meridian 1, such as CS 1000S and CS 1000M systems, or as Generic systems (non-Meridian 1 systems).

The CS 1000M Cabinet and the CS 1000M Chassis are both recognized by OTM as “Small Systems”.

The Generic system configuration provides access through VT220 Terminal Emulation to systems such as Meridian Mail or through a web browser to systems such as Survivable Remote Gateway (SRG). Meridian Passport, MSL-100, and Business Communication Manager (BCM) are examples of additional systems that you can add to OTM (refer to the appropriate chapter within this user guide for more information). The Navigator Configuration menu allows the system administrator to add, change, and delete sites and systems

Note: For more information about the Navigator and System windows, see “Using Windows Navigator” on page 77.

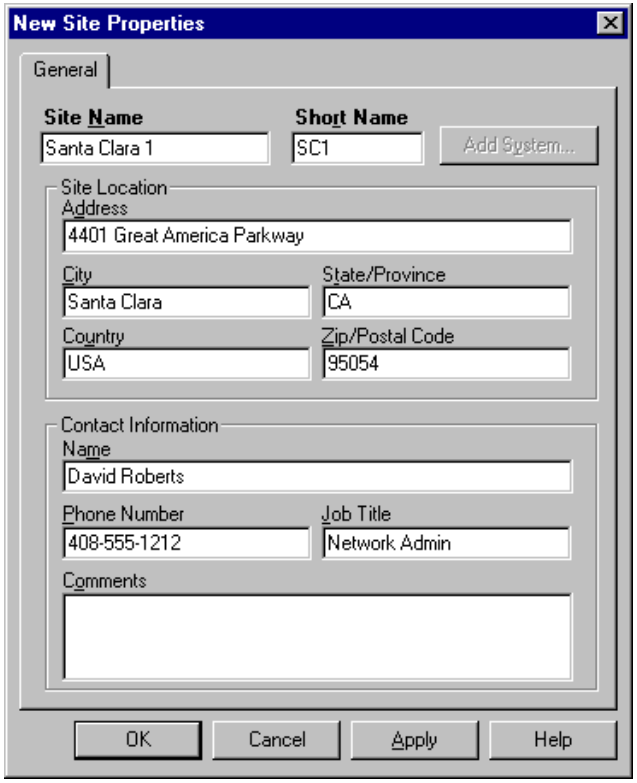
Adding a site

You can add up to 3000 sites to the OTM Navigator window.

Procedure 3
To add a site

1 In the OTM Navigator window, choose **Configuration > Add Site**. The New Site Properties dialog box appears (Figure 13).

Figure 13
New Site Properties dialog box



2 Enter the Site Name and Short Name fields (these are required fields).

The Site Name appears in the Navigator tree. The Short Name is an abbreviated site name that appears in the Alarm Banner.

3 In the Site Location box, fill in the site address information.

4 In the Contact Information box, fill in the contact name and related information. Click **Apply**.

5 To add a new system to this site:

   a. Click **Add System**.

   b. Follow the instructions for "Adding a system" on page 107, and "Adding a Generic system or device" on page 142.

6 When you have finished entering Site information, click one of the following buttons to add the site to the Navigator tree:

- **OK** adds the site and closes the property sheet.
- **Apply** adds the site and leaves the property sheet open, allowing you to add another system to this site. Repeat step 5 to add another system.
- **Cancel** closes the dialog box without adding the site.
- **Help** opens up the Help file for Navigator.

Setting up a system to work with OTM

Follow this procedure to set up a system.

Procedure 4
Setting up a system

1 Verify that the system has the following system configuration:

- The appropriate release, configured with the appropriate packages
- 48 MB or greater of memory
- For Ethernet communications:
  - X11 Release 22 or later
  - IOP cards (Part number NT6D63BA or later), IOP/CMDU cards (Part number NT5D20BA or later) (not applicable to Meridian 1 PBX 11C Cabinet systems), Release 22, or IODU/C cards (Part number NT5D61AB or later)
  - One or two Ethernet AUI cables (Part number NT7D90DA or later). You attach one cable to each IOP, IOP/CMDU, or IODU/C.
  - For 11C, an NTDK27AA Ethernet cable

2 For Ethernet networks, you need the following:

- One or two Ethernet transceivers (different types for 10BaseT and 10Base2 cabling): attach one transceiver to each AUI cable

— Ethernet communications cable: 10BaseT cabling requires Category 5 cable with RJ45 connectors

Note: Although normal telephone cable and Category 5 cable are similar in appearance, telephone cable is not acceptable for network applications.

— For 10Base2 cabling, an RG58 cable with BNC connectors

Note: Although normal television video coaxial cable and RG58 cable are similar in appearance, video coaxial cable is not acceptable for network applications.

- an Ethernet hub for the 10BaseT interface,

CAUTION — Service Interruption

If you plan to connect the system to a corporate network, you require an Ethernet gateway or router to separate the system from the corporate network. If you connect the system without a gateway or router, you adversely affect the system's call handling ability.

3 For PPP communication, you need the following:

- Hayes command-compatible modem
- Modem cables
- For system SDI ports, user type MTC and SCH set in LD 17

4 For serial communication, you need the following:

- Hayes command-compatible modem only for remote dial-up
- Modem cables
- Direct serial cable connection between the PC and the SDI port on the switch
- For system SDI ports, the appropriate user type set in LD 17 for each OTM application (Table 4)

Table 4
SDI port settings for OTM applications

OTM application	SDI port setting
Station Administration	SCH
ESN	SCH
Telecom Billing System	CTY
Traffic Analysis	TRF if information is output to a buffer box; SCH if information is collected hourly from the system

5 Configure OTM users on the system:

User input is shown in **bold** following the > prompt (for example, **LD 17)**.

a. Install the appropriate release of software.

b. Perform an INIT.

The OTM application does not function properly if an INIT has not been performed.

c. Configure Limited Access Password (LAPW). OTM communicates with the systems through LAPW IDs and passwords configured on the systems.

d. When a LAPW is defined to collect traffic data from LD 2, configure the password to have access to all customers by setting the CUST prompt to **ALL**. For more information about Limited Access to Overlays, see *Features and Services* (553-3001-306).

>**logi <ID>**, where **ID** is the login ID.

PASS?> <***XXXXXX***>, where *XXXXXX* is the level 1 or level 2 password.

WARNING: THE PROGRAMS AND DATA STORED ON THIS SYSTEM ARE LICENSED TO OR ARE THE PROPERTY OF NORTEL NETWORKS AND ARE LAWFULLY AVAILABLE ONLY TO AUTHORIZED USERS FOR APPROVED PURPOSES. UNAUTHORIZED ACCESS TO ANY PROGRAM OR DATA ON SYSTEM IS NOT PERMITTED. THIS SYSTEM MAY BE MONITORED AT ANY TIME FOR OPERATIONAL REASONS. THEREFORE, IF YOU ARE NOT AN AUTHORIZED USER, DO NOT ATTEMPT TO LOGIN.

TTY #00 LOGGED IN 15:02 9/7/1996

e. The following section is required only if login names are not configured.

>**LD 17**

CFN000
MEM AVAIL: (U/P): 3352174 USED: 203153 TOT: 3555327
DISK RECS AVAIL: 2764
DCH AVAIL: 15 USED: 1 TOT: 16

AML AVAIL: 10 USED: 0 TOT: 10

REQ> **chg**
TYPE> **pwd**
PWD2 (Your level 2 password)
LNAME_OPTION> **yes**

MEM AVAIL: (U/P): 3352174 USED: 203153 TOT: 3555327
DISK RECS AVAIL: 2764
DCH AVAIL: 15 USED: 1 TOT: 16
AML AVAIL: 10 USED: 0 TOT: 10

DEFAULT LOGIN NAMES SAVED

At this point, your old passwords work with either the newly assigned user IDs or with the default user ID values associated with your old passwords. See the online Help for LD 17, LNAME_OPTION for more information. Alert others of any changes (for example, all technicians with access to the system, the Distributor, and so on). Continue configuring LAPW and OTM.

REQ> **chg**
TYPE> **pwd**
PWD2 (Your level 2 password)
LNAME_OPTION> **yes**
NPW1
LOGIN_NAME
NPW2
LOGIN_NAME

Note: Prior to entering n for LAPW, check with your PBX Administrator to ensure that the value for n is not a preconfigured value. For example, LAPW=0 is preconfigured with SpeedCall List denied.

LAPW> **<n>**, where **n** is the Limited Access Password
PWTP
PW*n* where *n* is the Limited Access Password

You are prompted to enter your new password.

LOGIN_NAME> **<xxxxxx>**, where *xxxxxx* is your login name.
OVLA> **all**
OVLA
CUST> **all**
CUST
HOST
MAT> **yes**
MAT_READ_ONLY> **no**

```
OPT
LAPW
FLTH

LOCK
AUDT
INIT

MEM AVAIL: (U/P): 3352149    USED: 203178    TOT: 3555327
DISK RECS AVAIL: 2764
DCH  AVAIL:   15   USED:    1   TOT:   16
AML  AVAIL:   10   USED:    0   TOT:   10
REQ> end
```

6 If you are using serial connections, skip this step. If you are using Ethernet or PPP connections, configure a PTY for each OTM application that runs simultaneously with other applications over Ethernet or PPP. For example, Maintenance Windows and System Terminal each require a pseudo-TTY (PTY) if they run at the same time. If you have enough free ports, Nortel recommends that you configure at least two PTYs. You can allocate a maximum of 8 PTYs (maximum of 4 PTYs on an Cabinet system system).

Find an empty TTY slot:

```
>LD 22
PT2000

REQ> prt
TYPE> adan tty

ADAN     TTY 0
 CTYP PTY
 DNUM 0
 PORT 0
 DES  pty0
 FLOW NO
 USER SCH
 XSM  NO
 TTYLOG       0
PORT 7
 DES  jonspty
 FLOW NO
 USER MTC SCH BUG
 XSM  NO
```

```
 TTYLOG      0
 BANR YES

ADAN    TTY 8
 CTYP SDI2
 DNUM 8
 DES  TECHSUN
 FLOW NO
 USER MTC SCH CTY BUG
 XSM  NO
 TTYLOG      0
 BANR YES
...

REQ> ****
OVL000
>LD 17
CFN000
MEM AVAIL: (U/P): 3352149    USED: 203178    TOT: 3555327
DISK RECS AVAIL: 2764
DCH  AVAIL:    15    USED:     1    TOT:    16
AML  AVAIL:    10    USED:     0    TOT:    10
```

Choose an empty port number between 0-15. Choose a PTY number 0-7. In this example, we find TTY 13 to be free, and assign PTY 0.

REQ> **chg**
TYPE> **adan**
ADAN> **new tty <n>**, where **n** is an available TTY port (0-15).
TTY-TYPE> **pty**
PORT> **<z>**, where **z** is an available PTY port (0-7).
DES> **<n>**
DES> **new pty**
FLOW
USER> **mtc bug sch**
TTYLOG
BANR

```
MEM AVAIL: (U/P): 3345946    USED: 209381    TOT: 3555327
DISK RECS AVAIL: 2764
DCH  AVAIL:    15    USED:     1    TOT:    16
AML  AVAIL:    10    USED:     0    TOT:    10
```

ADAN DATA SAVED
ADAN> **end**

7 Configure Ethernet and PPP on the system:

The host names (**M1ACTIVEIP**, **M1INACTIVEIP**) and IP addresses used in the following instructions are only examples. Actual host names and IP addresses should conform to your network plan.

- In LD 117, configure an IP address on the system:

>LD 117
>NEW HOST M1ACTIVEIP 47.1.1.10
>CHG ELNK ACTIVE M1ACTIVEIP

- If you are using a backup (inactive) IP, use LD 117 to configure it as well. This step does not apply to Meridian 1 PBX 11C Chassis systems.
- The backup (inactive) IP is only used when the switch is in split mode.

>NEW HOST M1INACTIVEIP 47.1.1.11
>CHG ELNK INACTIVE M1INACTIVEIP

- Configure the subnet mask.

>CHG MASK 255.255.255.0

- If you have a default gateway in the network, define the routing table in LD 117.

>LD 117
>NEW ROUTE 47.1.0.0 47.1.1.250

The first four digits define the network IP address. The remaining digits specify the gateway IP address.

>PRT ROUTE (list the configured routing table)
>ENL ROUTE #, where # is the route number

If desired, you can print all information about route, host, gateway, and related settings.

The routing table provides the system with the IP address of the gateway server so the system can send return messages to the gateway for forwarding to the requesting client.

You can use **PRT ROUTE** for a list of routes with route numbers.

You can use **STAT ROUTE** to see if the route was successfully enabled.

- If you are using PPP, use the default addresses unless there is an address conflict. If a conflict exists, obtain a new IP address from your network administrator and configure this address.

>**LD 117**
>NEW HOST LOCAL_PPP 47.0.0.2
>CHG PPP LOCAL LOCAL_PPP **M1ACTIVEIP**

>LD 117
>NEW HOST REMOTE_PPP *47.0.0.3*
>CHG PPP REMOTE REMOTE_PPP **M1ACTIVEIP**

- After you perform a series of **NEW**, **OUT**, **CHG** commands, type

>UPDATE DBS

to clean up the database before you get out of LD 117.

- Use Overlay 137 to verify the IP address:

>**LD 137** (***Note*:** Overlay 137 prompt is "**.**")
.DIS ELNK (disable Ethernet interface)
.ENL ELNK (enable Ethernet interface)
.STAT ELNK (verify IP address)

If the **STAT ELNK** command displays the correct IP address, your IP address configuration is done. Otherwise, you must INIT the system.

End of Procedure

Adding a system

Pre-Release 2.0 CS 1000 systems that were added in an earlier version of OTM cannot be converted to a Communication Server 1000 Release 3.0\4.0. You must delete the pre-Release 2.0 system and add a new Communication Server 1000 Release 3.0\4.0 system.

You can add as many as 3000 sites to OTM and 256 systems (including non-CS 1000 systems) to a site. You must have administrator privileges to add a system.

Refer to *Geographic Redundancy* 553-3001-307 for more information on the Geographic Redundancy (GR) feature in OTM.

Procedure 5
To add a system:

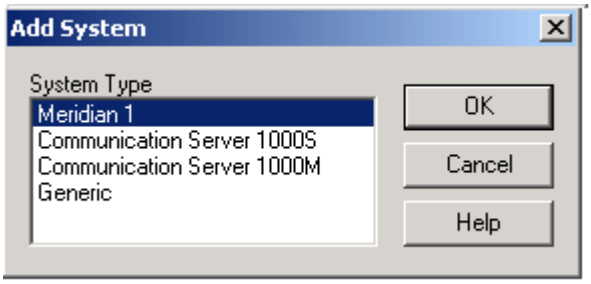
1 In the Navigator window, select the desired site.

If you are adding a new system from within the New Site Properties window, skip to step 3 in this procedure.

2 Choose **Configuration > Add System**, or use the right mouse-button pop-up window.

The Add System dialog box opens (Figure 14).

Figure 14
Add System dialog box



3 In the Add System dialog box, select one of the following systems:

- **Meridian 1** for a Meridian 1 system running running Communication Server 1000 Release 3.0 Software or later without a Signaling Server.
- **Comunication Server 1000** for a CS 1000 system running X21 Release 2.0 or Communication Server 1000 Release 3.0 Software or later.
- **Comunication Server 1000M** for a Meridian 1 system running Communication Server 1000 Release 3.0 Software or later with a Signaling Server.
- **Generic**

You may need to install additional software to enable other system types not listed in Figure 14. Follow the installation instructions included with your order.

The System Properties dialog box opens with the General tab displayed (Figure 15) or (Figure 16) if a Generic System is selected.

Figure 15
System Properties dialog box—General tab

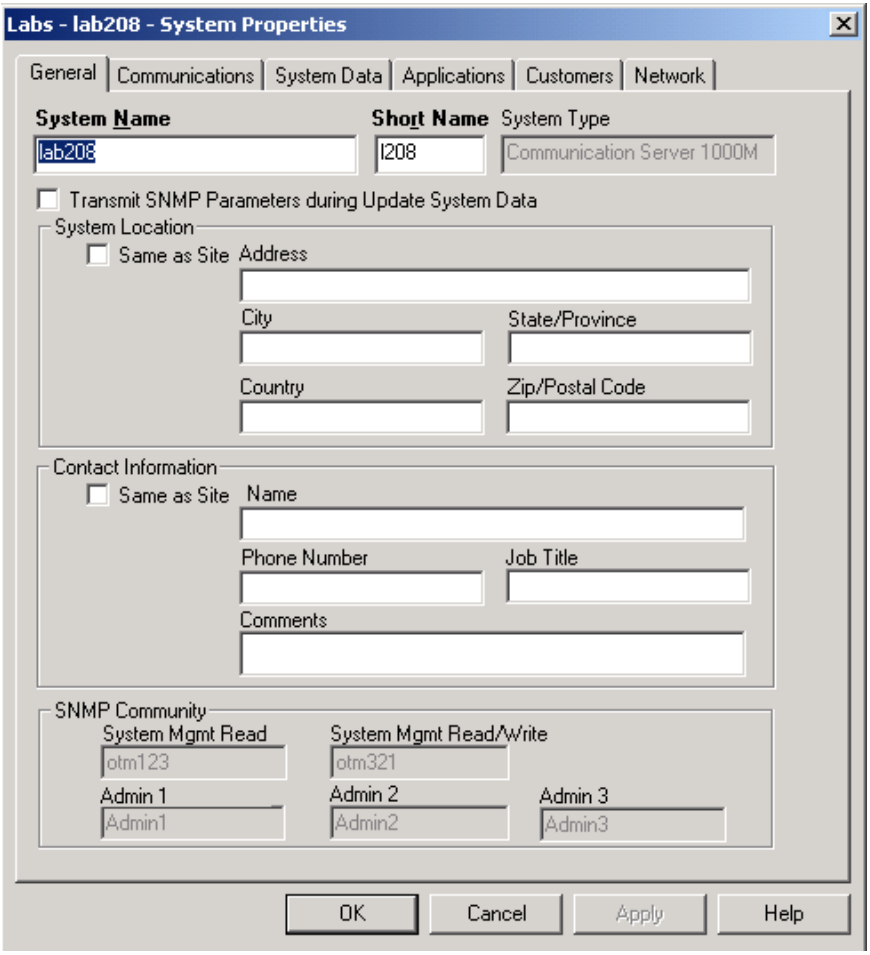
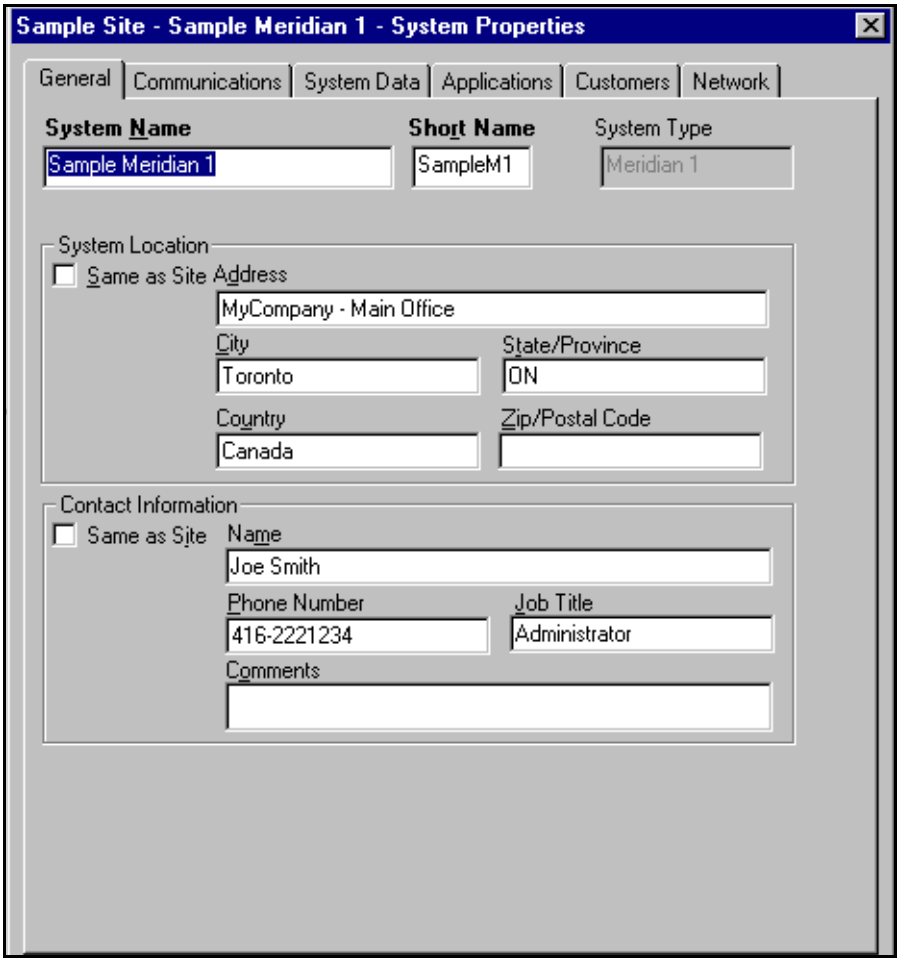


Figure 16
System Properties dialog box—General tab (Generic)



4 Enter the System Name and Short Name (required fields) and other information as needed. Click Apply.

Selecting the SNMP provisioning checkbox enables configuration of the SNMP parameters in LD 117 using the system and contact information from OTM during

Update System Data. The checkbox is enabled if the Release is 4 and the user is an administrator.

You can make system location and contact information the same as site information by selecting the Same as Site check box.

Bold fields indicate required information. To change a value, edit the field. Some fields may have a list of predefined choices. An arrow within a field indicates a drop-down list of choices. Click the arrow to select from the list. For more detailed information, refer to the online Help.

5 To add a new communications profile, click **System Properties—Communications** tab.

This tab defines the types of communications profiles that can be applied to system applications. One profile can be used for multiple applications.

IMPORTANT!

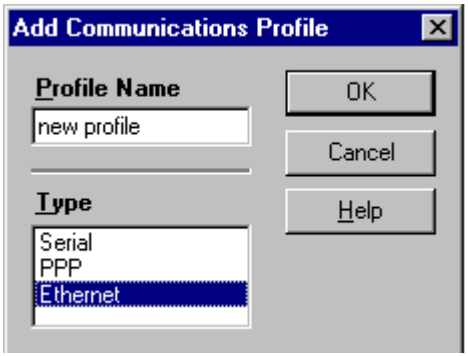
You must configure a Communications Profile for the Station Admin/ CPND/List Manager application. If you do not, the Update System Data function will not work. Applications such as Maintenance Windows and System Terminal (VT220) use the Communications Profile for the Station Admin/CPND/List Manager application.

OTM is shipped with a default communications profile. The Default profile is an Ethernet profile, and it cannot be deleted.

6 Click **Add**.

The Add Communications Profile dialog box appears (Figure 17).

Figure 17
Add Communications Profile dialog box



Select a communications type from the Type box, enter a Profile Name, and then click **OK** to return to the Communications tab.

7 Fill in the communications information for the new profile:

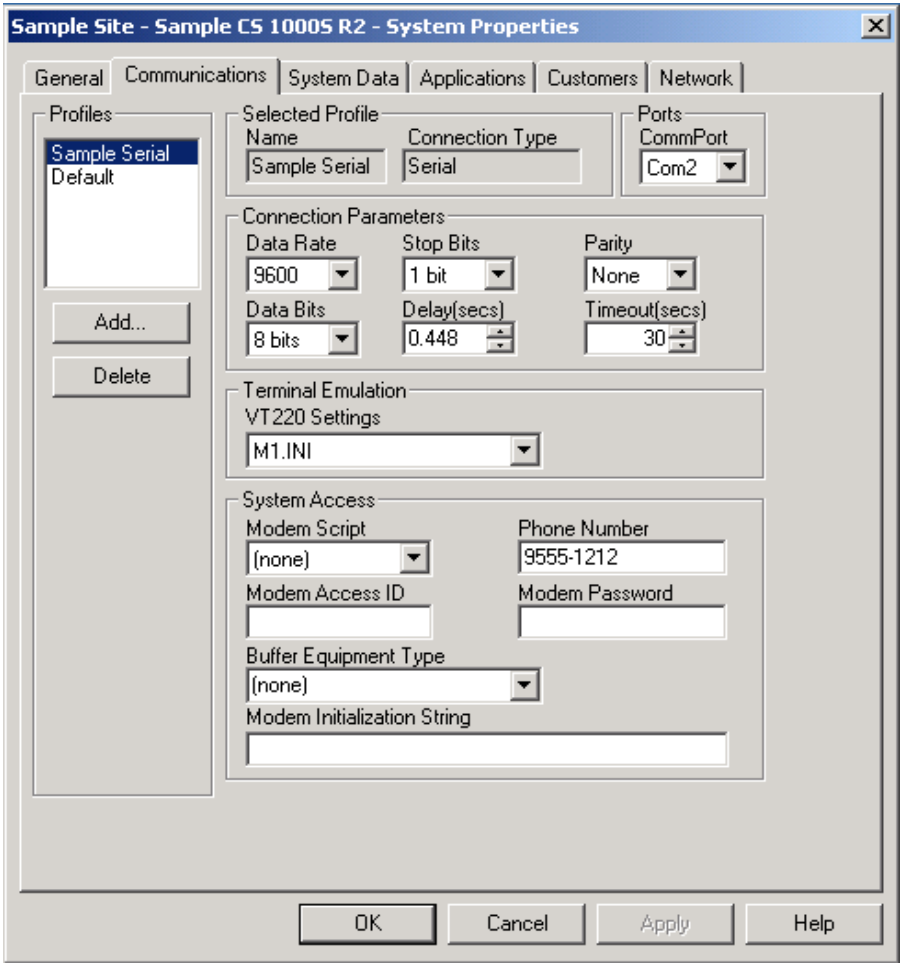
Ethernet (Figure 18):

a. Select the appropriate network protocol.

b. Enter the IP address that you configured on the CS 1000 system.

c. Click **Apply**.

Figure 18
System Properties—Communications tab—Ethernet Profile



PPP (Figure 19):

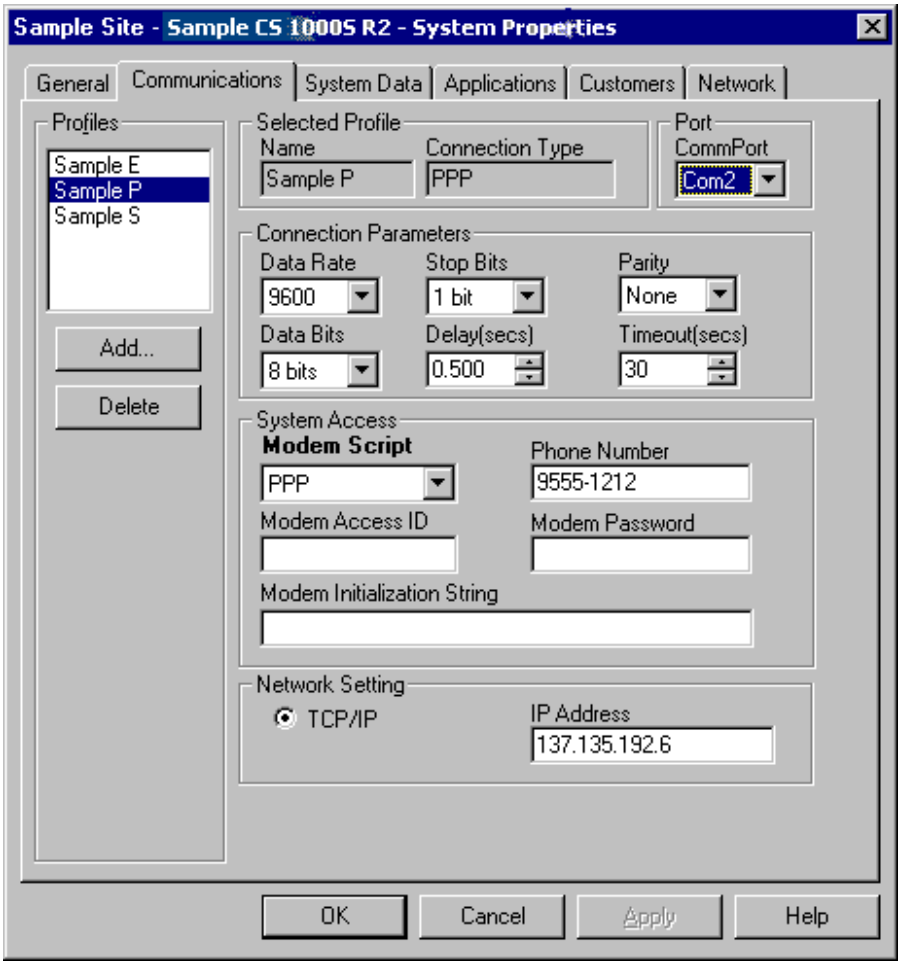
a. Enter all modem parameters and dial-up information.

b. Select PPP in the Modem Script text box.

c. Set the IP address to the local IP address, as configured on the system.

d. Click **Apply**.

Figure 19
System Properties—Communications tab—PPP Profile



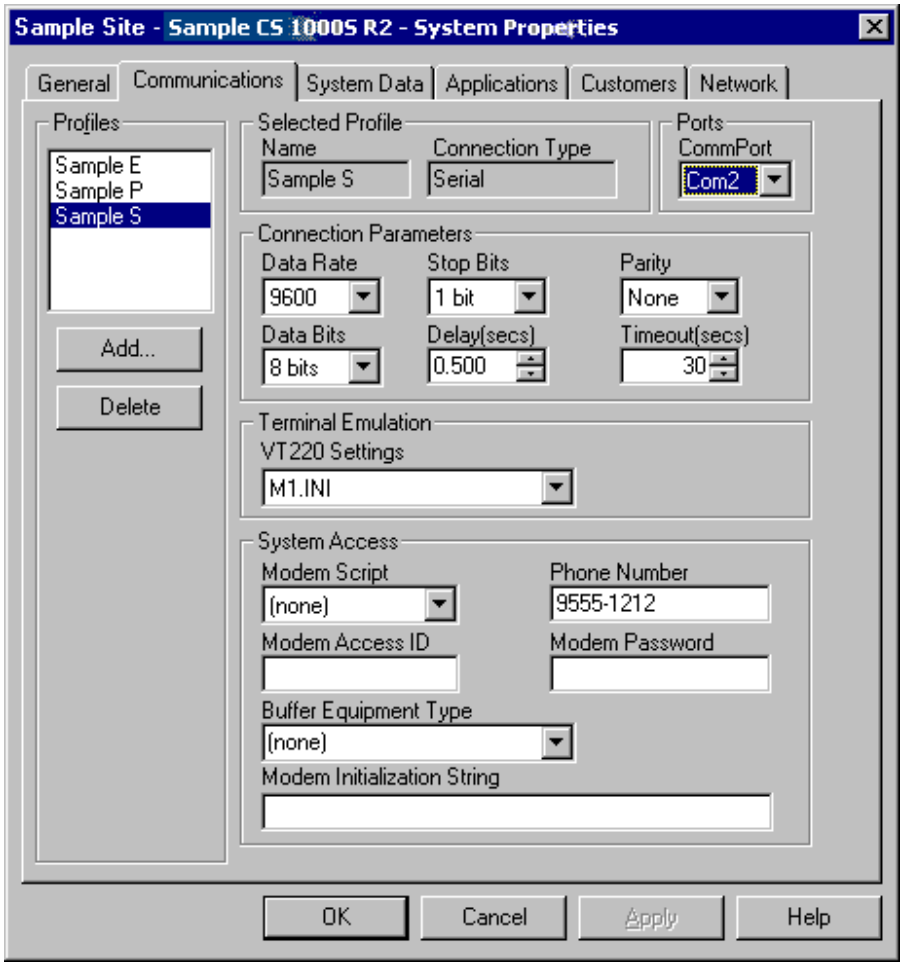
Serial (Figure 20):

a. Enter all modem parameters and dial-up information.

b. Select the appropriate value in the Modem Script drop-down list. This is usually None unless a specific value is defined for your system.

c. Click **Apply**.

Figure 20
System Properties—Communications tab—Serial Profile



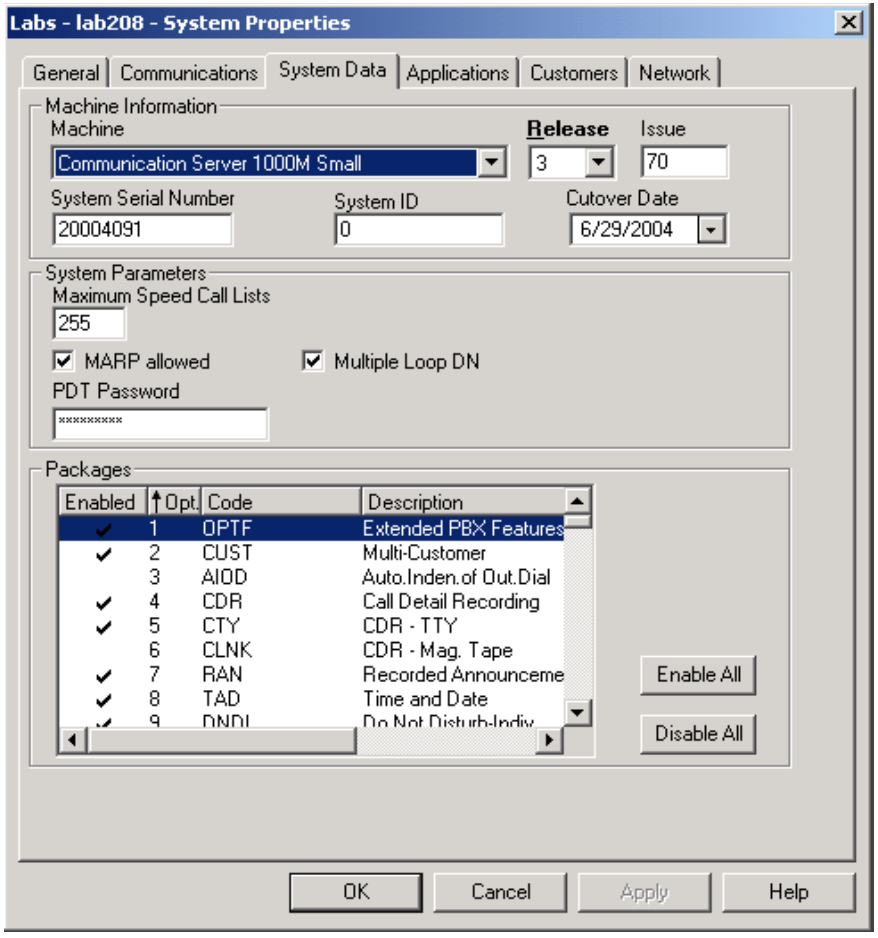
8 Click **System Data** tab. The System Properties dialog box—System Data tab appears (Figure 21).

Note: Schedule an upload to copy this data directly from an installed managed system. Select **File > Update System Data** in the System window. Update System Data uses the communications profile for Station Administration.

The Release is dependent on the machine selected. Only supported releases are displayed in the box.

OTM cannot differentiate between 11C and 11C mini. OTM always selects 11C. It is the user's reponsibility to ensure the proper system is in OTM Navigator.

Figure 21
The System Properties—System Data tab



a. Select the machine/system type and release version for the system.

Machine names are associated with the presence or absence of a signaling server. Selecting the Signaling Server box in the Network tab changes the Machine names display.

Note: If the **Cutover Date** is modified, and a System Update performed, the modification remains as such and no date is retrieved from the switch.

b. Set the system parameters.

In the System Parameters box, the PDT password edit box lets you set the Level 2 password for the Problem Determination Tool (PDT). If you change this

password, you must manually change the PDT password on the system so that they match.

Note: The **PDT Password** field is used to communicate with the switch and is not retrieved.

c. Enable or disable feature packages.

d. Click **Apply**.

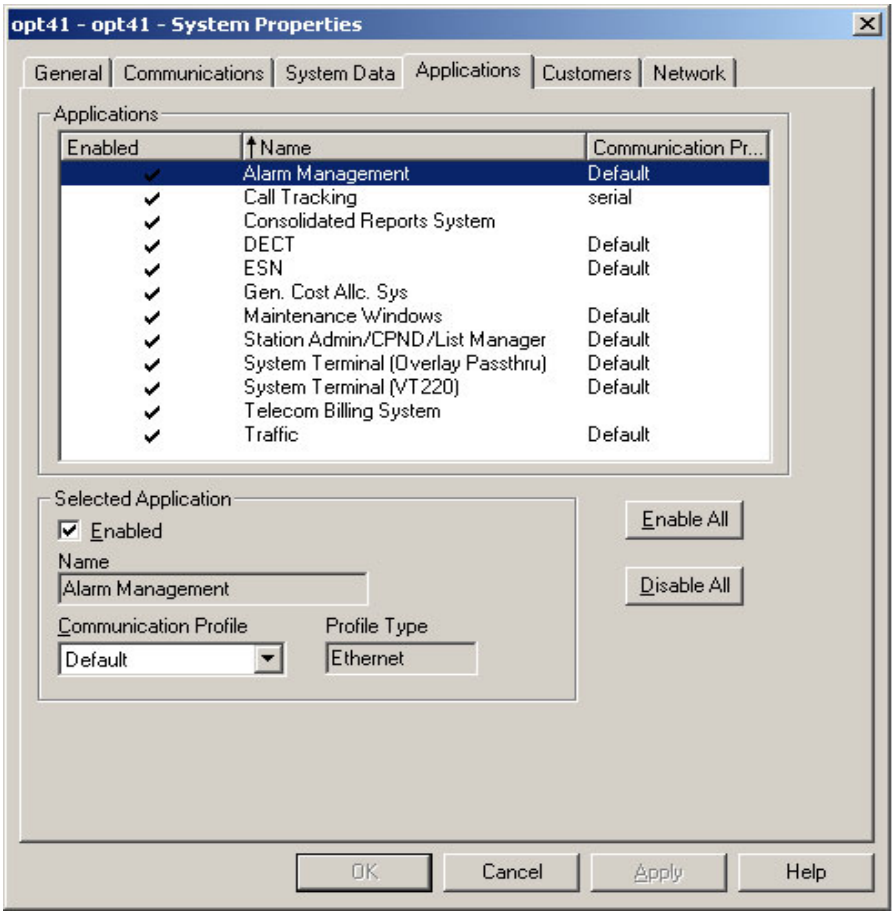
9 Click the Applications tab (Figure 22).

This tab defines the OTM applications that appear in the System window and the communications profile to be used with each application.

You must enable an application for it to be available in the System window.

Communications profile settings are defined on a site/system basis and are shared by the OTM Server and its Clients. Consequently, if you define a serial communications profile for an OTM application, then both the OTM Server and OTM Client PCs must have a physical serial connection between the site/system and themselves. An OTM Client PC cannot use the COM ports of the OTM Server. Any communication task uses the resources of the PC on which it is running.

Figure 22
System Properties—Applications tab



To enable an application:

a. Select the application in the Applications tab.

By default, each application is selected. Modify these selections by deselecting applications.

b. Choose one the following:

i. Select a Communications Profile from the drop-down list. A check mark appears next to the application, and the Enabled box is also selected.

ii. Click **Enable All** : Enables the default communications profile for all available applications under the **Application** tab (with the exception of Call Tracking which is always serial).

If there is no serial profile added, then Call Tracking is not enabled. If the user has added any serial profile, then the first profile is set as the communications profile.

The General Cost Allocation System and Telecom Billing System applications are enabled without a communications profile.

c. Click **OK**.

To disable an application:

a. Select the application in the **Applications** tab.

b. Choose one of the following

i. In the **Selected Application** box, clear the Enabled check box.

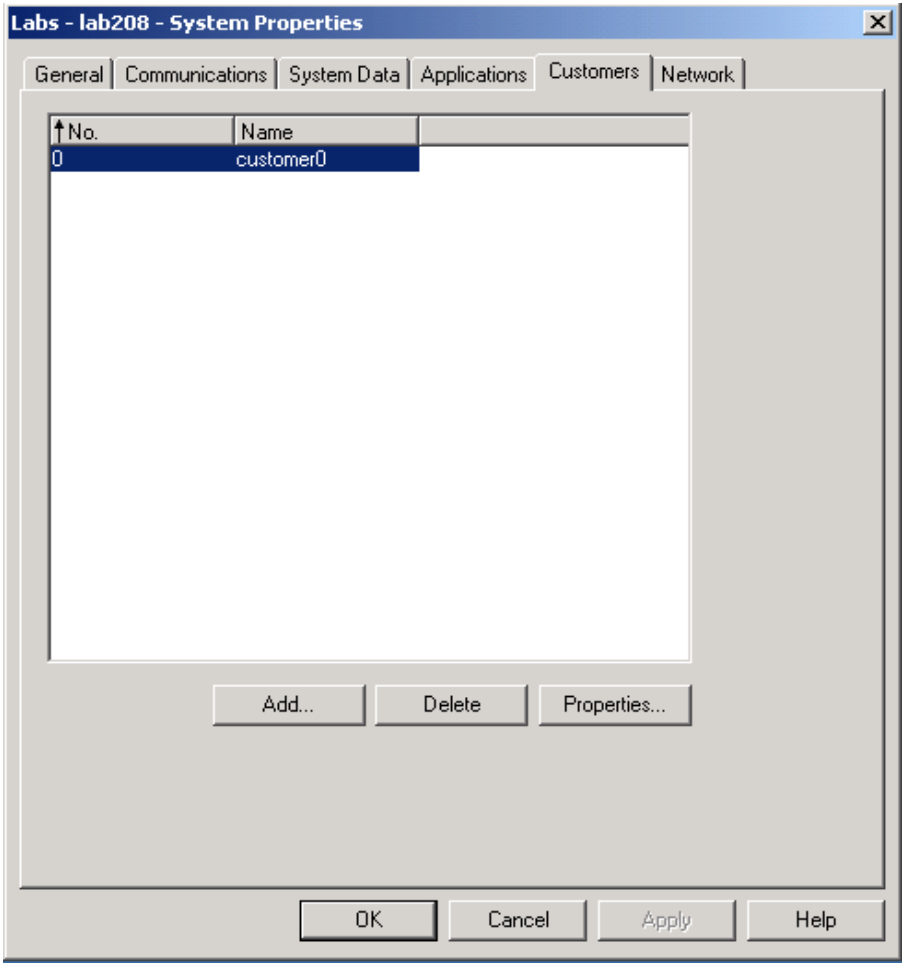
ii. Click **Disable All** : Disables the communications profile for all available applications under the **Application** tab.

When you have finished entering the information in the Applications tab, click **Apply**.

10 If applicable, click the **Customers** tab.

The System Properties—Customers tab appears (Figure 23).

Figure 23
System Properties—Customers tab



This tab lists the customers currently defined for this system.

IMPORTANT!

This information is not automatically updated and must be updated by using the LD 15 customer overlay. LD 15 is the overlay interface that enables customers to configure their systems on the CS 1000. For more information on overlay interfaces, see the System online Help.

Customer information is required for Station Administration/CPND and ESN applications.

11 To add a customer:

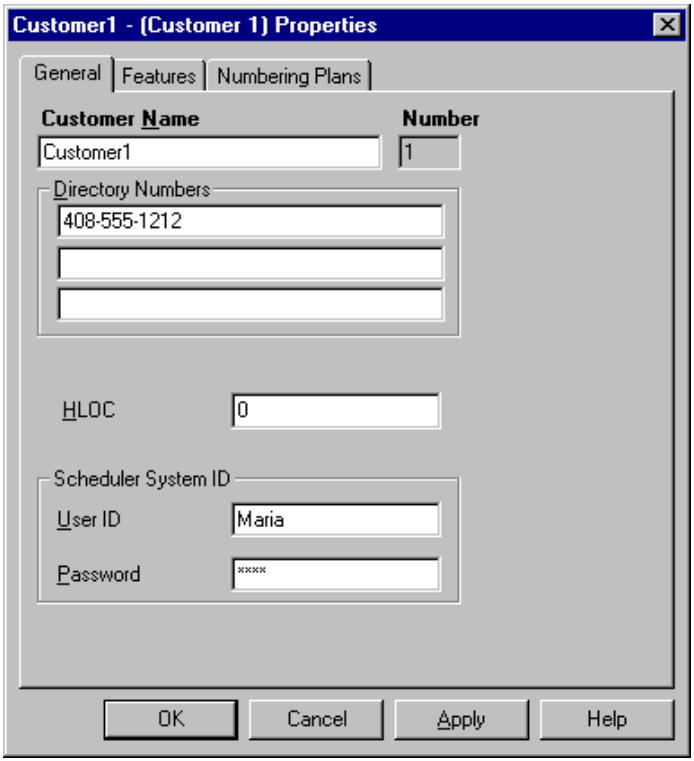
a. Click **Add** in the System Properties—Customers tab.

b. Select a Customer number.

c. Click **OK**.

The Customer Properties dialog box opens with the General tab displayed (Figure 24).

Figure 24
Customer Properties—General tab



d. Fill in the general information for the customer.

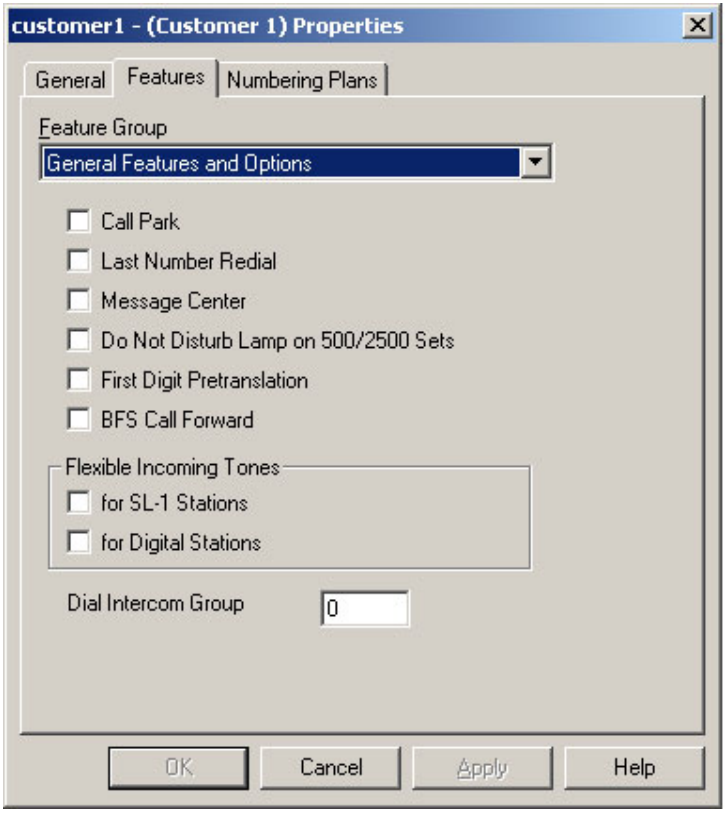
Note: Schedule an upload to copy this data directly from an installed managed system. Select **File > Update System Data** in the System window. Update System Data uses the communications profile for Station Administration.

e. Enter User information in the Scheduler System ID text box. This is the User's ID and password for the system that OTM is managing.

f. Click the **Features** tab.

The Customer Properties—Features tab displays (Figure 25).

Figure 25
Customer Properties—Features tab



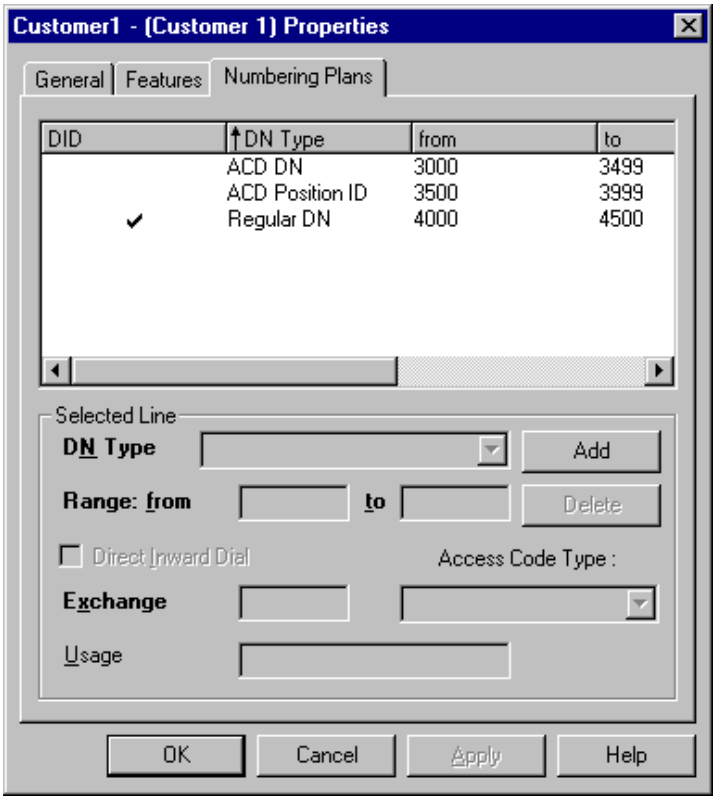
g. Fill in the feature information for the customer.

h. Click the Numbering Plans tab.

The Customer Properties—Numbering Plans tab appears (Figure 26).

Note: The **Secure Data Password** field cannot be retrieved from the switch since it will be encrypted. The user has the option of entering the password manually after the update system data.

Figure 26
Customer Properties—Numbering Plans tab



i. Fill in the numbering plan information for the customer.

The numbering plan information is used to validate DNs in Station Administration.

12 Click one of the following buttons to save the information:

- **OK** adds the customer and returns to the System properties sheet.
- **Cancel** closes the dialog box without adding the customer.
- **Apply** adds the customer and leaves the Customer Properties dialog box open so that you can add other information for this customer.
- **Help** displays online help for customer configuration.

13 To delete a customer, click **Delete** in the System Properties—Customers tab. A delete confirmation box opens. Click **OK**.

14 To modify customer information, click **Properties** in the System Properties—Customers tab. The Customer Properties dialog box opens with the General tab displayed. Modify information in the appropriate tabs and click **OK**.

15 Click **Network** tab.

The Network page display depends on the system added and on the size of the system:

- **CS 1000M** -'Signaling Server present' is selected by default.
- **Meridian 1** -'Signaling Server present' checkbox is unselected by default.
- **CS 1000 / CS 1000S** - 'Signaling Server present' checkbox is removed.

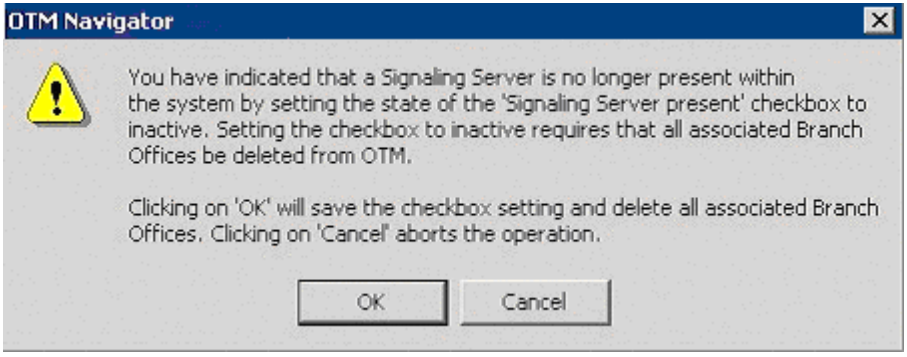
16 Choose one of the following systems:

Large Systems

IMPORTANT!

If there is at least one Media Gateway 1000B (MG 1000B) associated with a Large System, clicking **OK/Apply** after clearing the **Signaling Server present** checkbox displays the following Warning dialog box as shown in Figure 27 to confirm the deletion of the associated MG 1000B.

Figure 27
Warning


OTM Navigator
You have indicated that a Signaling Server is no longer present within the system by setting the state of the 'Signaling Server present' checkbox to inactive. Setting the checkbox to inactive requires that all associated Branch Offices be deleted from OTM.
Clicking on 'OK' will save the checkbox setting and delete all associated Branch Offices. Clicking on 'Cancel' aborts the operation.
OK
Cancel

a. Click **OK** to delete all associated MG 1000Bs.

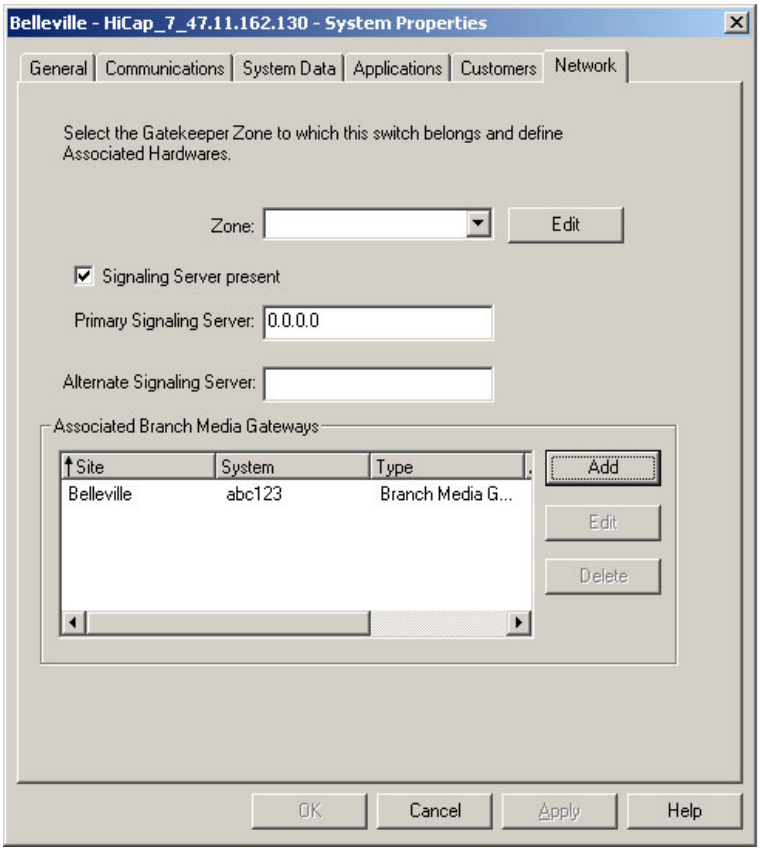
b. Click **Cancel** to re-select the **Signaling Server present** check box and not delete the associated MG 1000B.

CS 1000M Large System - Signaling server present selected (Figure 28)

The **Primary Signaling Server** and **Alternate Signaling Server** controls are enabled with the following associated values:

- Add button within **Associated Branch Media Gateways** is enabled.
- The Release is dependent on the machine selected. Only supported releases are displayed in the box.

Figure 28
CS 1000M Large System - 'Signaling server present' selected

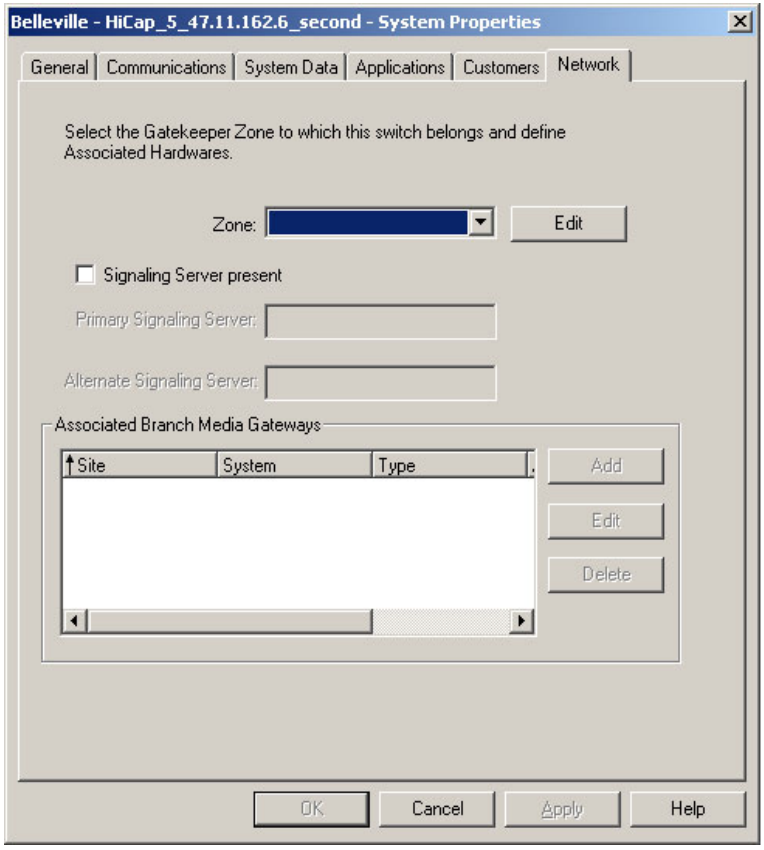


CS 1000M Large System - Signaling server present cleared (Figure 29)

The **Primary Signaling Server** and **Alternate Signaling Server** controls are disabled with the following associated values.

- Add button within **Associated Branch Media Gateways** is disabled.
- The Release is dependent on the machine selected. Only supported releases are displayed in the box.

Figure 29
CS 1000M Large System - 'Signaling server present' cleared



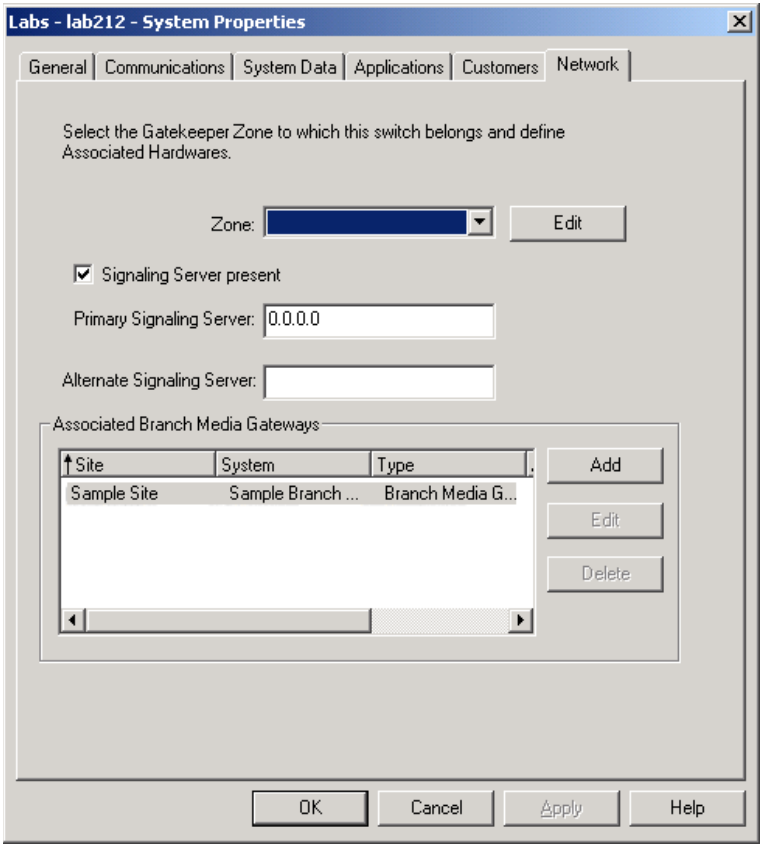
Small Systems

CS 1000M Small System - Signaling server present selected (Figure 30)

The **Primary Signaling Server** and **Alternate Signaling Server** controls are enabled with the following associated values:

- **Add** button for Survivable Cabinets, Media Gateways and Branch Media Gateways is enabled.
- The Release is dependent on the machine selected. Only supported releases are displayed in the box.

Figure 30
CS 1000M Small System- Signaling server present selected



17 For a Small System with Signaling Server selected, select one of the following:

Add a Gatekeeper:

From the drop-down list, select the Gatekeeper Zone and enter the IP address or host name for the Primary Signaling Server. You can also define an Alternate (redundant) Signaling Server.

For information on managing Gatekeeper Zones, see "Managing gatekeeper zones" on page 139.

Add Survivable Cabinets, Survivable Media Gateway/MG1000S, or Branch Media Gateway/MG 1000B:

a. Click **Add**. The Add Associated Equipment window displays. (Figure 31)

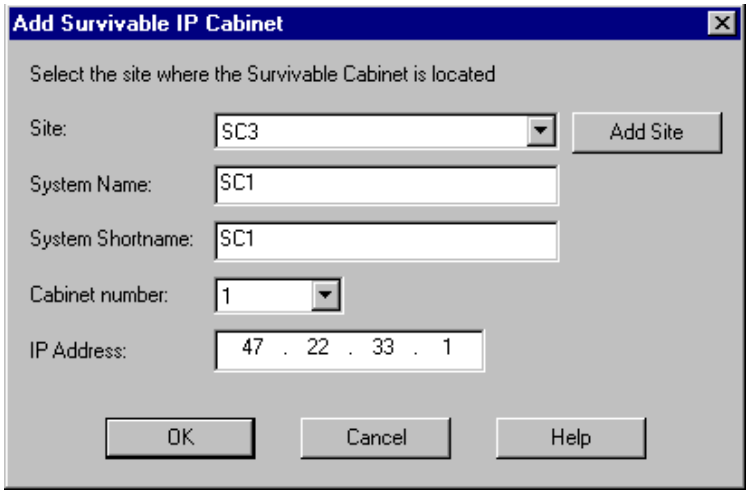
Figure 31
Add Associated Equipment dialog box

b. Select one of the following:

- **Survivable IP Cabinet:** Click **OK**. The Add Survivable IP Cabinet dialog box opens (Figure 32). Proceed to "Adding a Survivable IP Cabinet" on page 129.
- **Survivable Media Gateway/MG1000S:** Click **OK**. The Add Survivable Media Gateways dialog box opens (Figure 34). Proceed to "Adding Survivable Media Gateways" on page 131.
- **Branch Media Gateway/MG 1000B:** Click **OK.** Proceed to "Adding an MG 1000B" on page 136, procedure 6, step 4.

Adding a Survivable IP Cabinet

Figure 32
Add Survivable IP Cabinet dialog box



c. Select the Site and Cabinet number from the drop-down lists, and enter the System Name, System Shortname, and IP Address for this cabinet.

For additional information on Meridian 1 PBX 11C Cabinet survivable expansion cabinets, see *Communication Server 1000M and Meridian 1: Large System Installation and Configuration* (553-3021-210).

For additional information on the Media Gateway, see *Communication Server 1000S: Installation and Configuration* (553-3031-210)

d. Click **OK**.

A new System Properties dialog box appears.

The Applications tab settings are copied from the Main Cabinet system properties. If the Default Ethernet communications profile is selected for the applications on the Main Cabinet that are likely to be used by the Survivable IP Expansion Cabinets, you can click **OK** to add the SIPE Cabinet and return to System Properties—Network tab for the Main Cabinet (step 9).

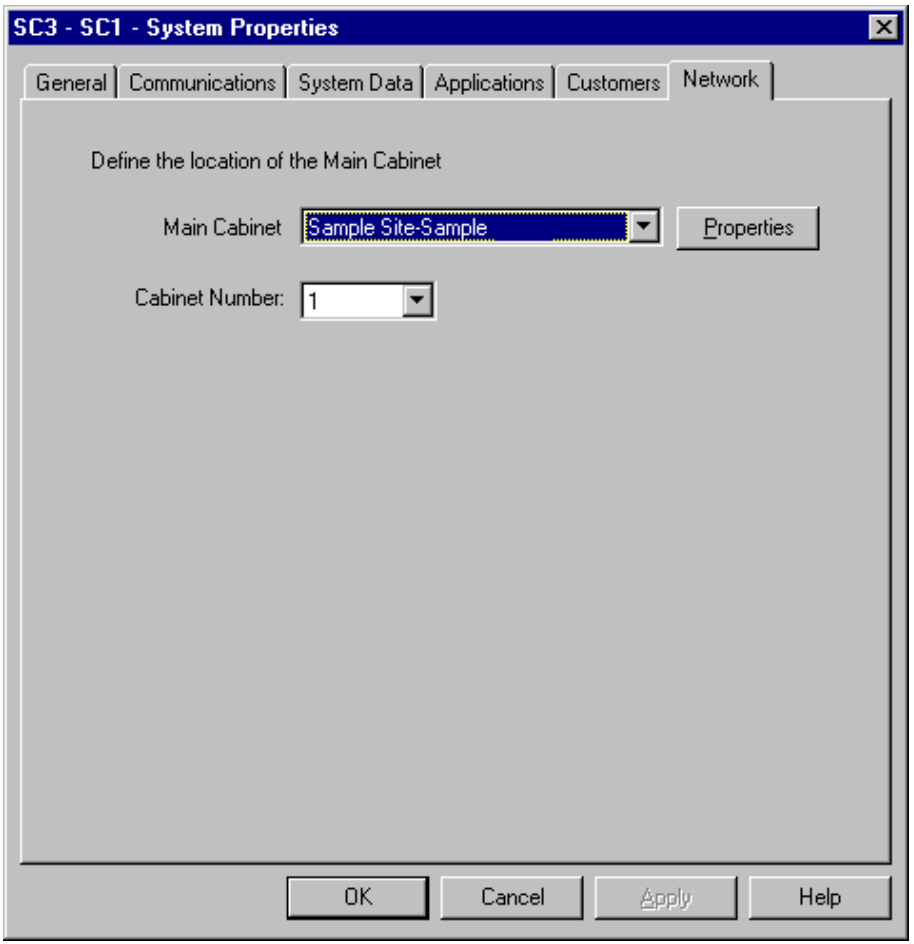
e. Enter the requested information for the General and Communications tabs (see steps 4 through 7 in this procedure).

The IP address entered in the Add Survivable IP Cabinet dialog box is copied into the default Ethernet communications profile.

The System Data and Customers tabs are read-only. These contain the information from the main cabinet.

f. Click the **Network** tab. The System Properties—Network tab appears (Figure 33).

Figure 33
Survivable Cabinet System Properties—Network tab



g. Select the Main Cabinet and the Cabinet Number from the drop-down lists.

h. Click **OK** to close the System Properties dialog box for the Survivable IP Expansion cabinet and return to the System Properties—Network tab for the Main Cabinet.

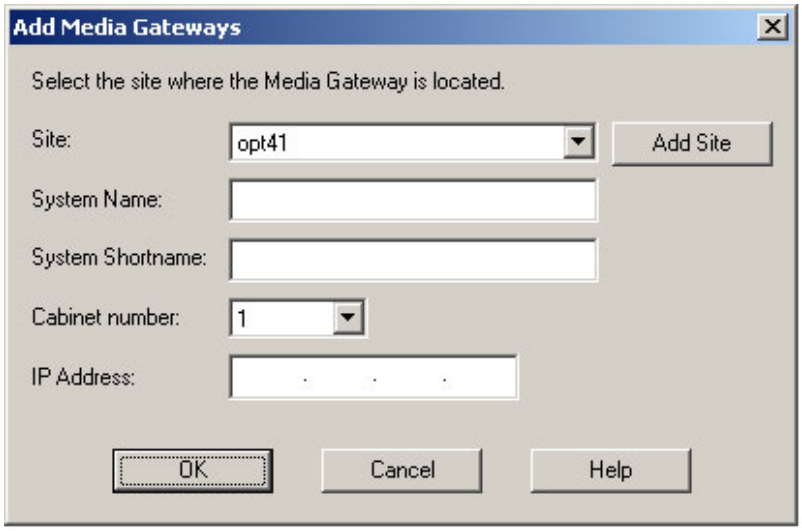
i. In the System Properties dialog box, click one of the following buttons:

- **OK** adds the system and closes the dialog box.
- **Cancel** closes the dialog box without adding the system.
- **Apply** adds the system and leaves the dialog box open.
- **Help** provides online Help.

The new system is added to the tree under the selected site.

Adding Survivable Media Gateways

Figure 34
Add Media Gateways dialog box



j. Select the Site and Cabinet number from the drop-down lists (Figure 34), and enter the System Name, System Shortname, and IP Address for this Media Gateway.

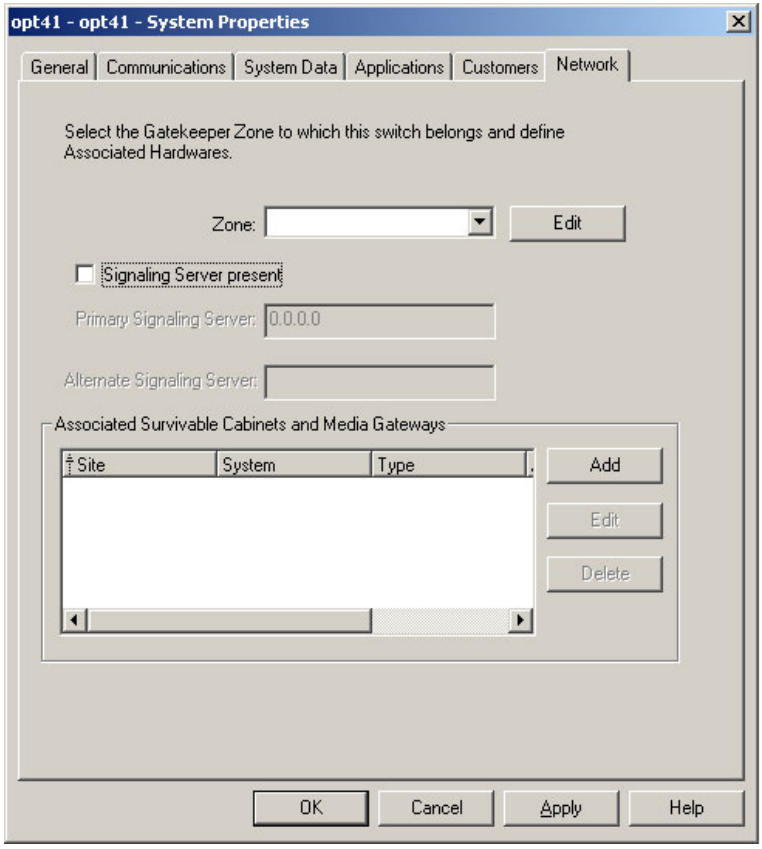
k. Click **OK**.

CS 1000M Small System -Signaling server present cleared (Figure 35)

The **Primary Signaling Server** and **Alternate Signaling Server** controls are disabled with the following associated values.

- **Add** button for Survivable Cabinets, Media Gateways and Branch Media Gateways is enabled.
- The Release is dependent on the machine selected. Only supported releases are displayed in the box.

Figure 35
CS 1000M Small System - Signaling server present cleared



18 For a Small System with Signaling Server cleared, select one of the following:

Add a Gatekeeper:

Select the Gatekeeper Zone from the drop-down list, and enter the IP address or host name for the Primary Signaling Server. You can also define an Alternate (redundant) Signaling Server.

For information on managing Gatekeeper Zones, see "Managing gatekeeper zones" on page 139.

Add Survivable Cabinets, Survivable Media Gateway/MG 1000S, and Branch Media Gateway/MG1000B:

a. Click **Add**. The Add Associated Equipment dialog box displays. (Figure 36)

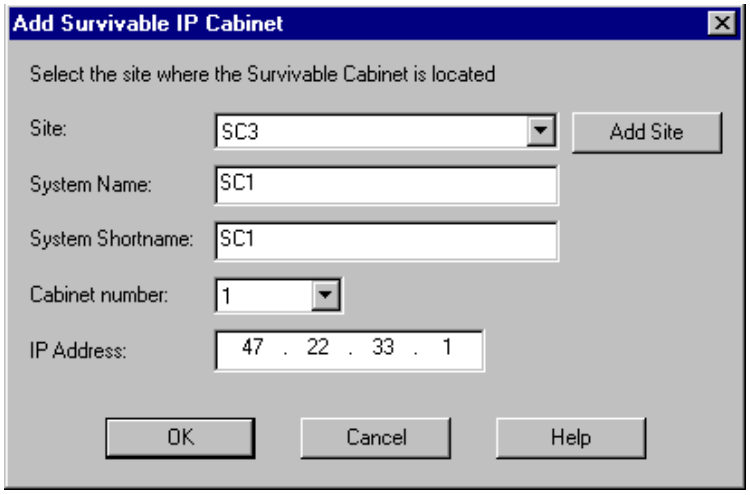
Figure 36
Add Associated Equipment dialog box

b. Select one of the following:

- **For Survivable Cabinet:** Click **OK**. The Survivable Cabinet dialog box opens (Figure 37).
- **For Survivable Media Gateway/MG1000S:** Click **OK**. The Add Survivable Media Gateways dialog box opens (Figure 38).
- **For Branch Media Gateway/MG1000B**: Click **OK**. Proceed to "Adding an MG 1000B" on page 136, procedure 6, step 4.

Survivable IP Cabinet

Figure 37
Add Survivable IP Cabinet dialog box



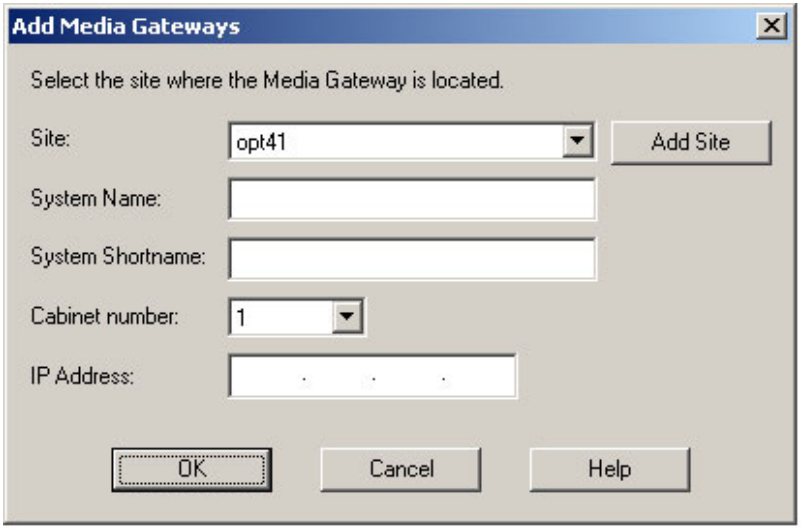
c. Select the Site and Cabinet number from the drop-down lists, and enter the System Name, System Shortname, and IP Address for this cabinet.

d. Click **OK**.

For additional information on Meridian 1 PBX 11C Cabinet survivable expansion cabinets, see *Communication Server 1000M and Meridian 1: Large System Installation and Configuration* (553-3021-210).

Survivable Media Gateway

Figure 38
Add Media Gateways dialog box



e. Select the Site and Cabinet number from the drop-down lists, and enter the System Name, System Shortname, and IP address for this Media Gateway.

f. Click **OK**.

For additional information on the Media Gateway, see *Communication Server 1000S: Installation and Configuration* (553-3031-210).

End of Procedure

Converting a Small System to an MG 1000B

There is no automatic conversion utility in OTM. Therefore the user must manually convert the system. This is a one-time operation.

IMPORTANT!

This procedure must be performed only after the hardware and software conversion has been completed on the switch

To convert an Meridian 1 PBX 11C Cabinet system to an MG 1000B system in OTM, perform the following steps:

1. From OTM navigator, add a new MG 1000B system. See "Adding an MG 1000B" below.
2. Retrieve all Station, List Manager, CPND, and ESN data from the switch.
3. Verify that the data is correct for the new MG 1000B system.
4. Delete the old Small System from OTM.

Deleting Survivable Cabinets and Media Gateways

Survivable cabinets and media gateways cannot be deleted from the OTM navigator window.

CAUTION — Service Interruption
A system cannot be deleted until all the associated survivable systems are deleted first.

1. From the Main Office system properties, select **Network** tab.
2. Select the associated system.
3. Click **Delete**.

Adding an MG 1000B

OTM supports MG 1000B for Large and Small Systems.

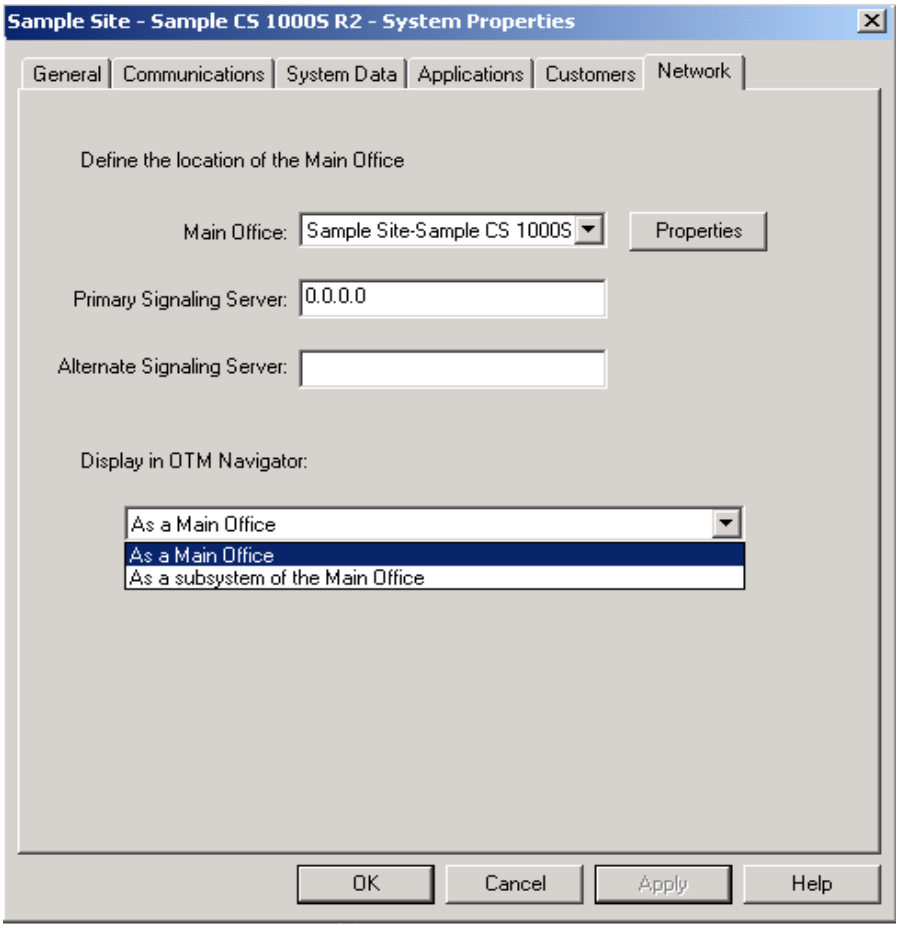
An MG 1000B contains a call processor for connection to the local PSTN and for analog devices such as fax machines. IP Phones are located at the MG 1000B; however, under normal conditions, call processing for these telephones is handled by the call server at the Main Office. The MG 1000B and the Main Office are connected by IP trunks, virtual trunks, or through trunks to the PSTN.

For additional information on the MG 1000B feature, see *Branch Office: Installation and Configuration* (553-3001-214).

Procedure 6

1. Select a system, go to the System Properties-Network tab.
2. Click **Add**.
3. Select **Branch Media Gateway/MG1000B** in the Add Associated Equipment dialog box (see Figure 36 on page 133) and click **OK**. A new Add Survivable Branch Media Gateways dialog box opens.
4. Select the appropriate site and click **OK**. A new System Properties dialog box opens.
5. Input necessary parameter in the System Properties dialog box-General tab and click **Apply**. A new system is added to the tree under the selected site.
6. Click the **Network** tab. The System Properties dialog box-Network tab opens (see Figure 39 on page 138).
7. Select the Main Office from the drop-down list. Click **Properties** to display the System Properties of the selected Main Office.
8. Enter the IP address for the Signaling Server. You may also define an Alternate (redundant) Signaling Server. Use the drop-down list to select whether this MG 1000B should be displayed as a Main Office or a subsystem of the Main Office in the OTM Windows and Web Navigators.
9. Click **OK**.

Figure 39
MG 1000B System Properties dialog box—Network tab



10 In the System Properties dialog box, click one of the following buttons:

- **OK** adds the system and closes the dialog box.
- **Cancel** closes the dialog box without adding the system.
- **Apply** adds the system and leaves the dialog box open.
- **Help** provides online Help.

End of Procedure

Deleting an MG 1000B

MG 1000B's cannot be deleted from the OTM navigator window.

CAUTION — Service Interruption
A system cannot be deleted until all the associated survivable systems are deleted first.

1 From the Main Office system properties, select the **Network** tab.

2 Select the associated system.

3 Click **Delete**.

Managing gatekeeper zones

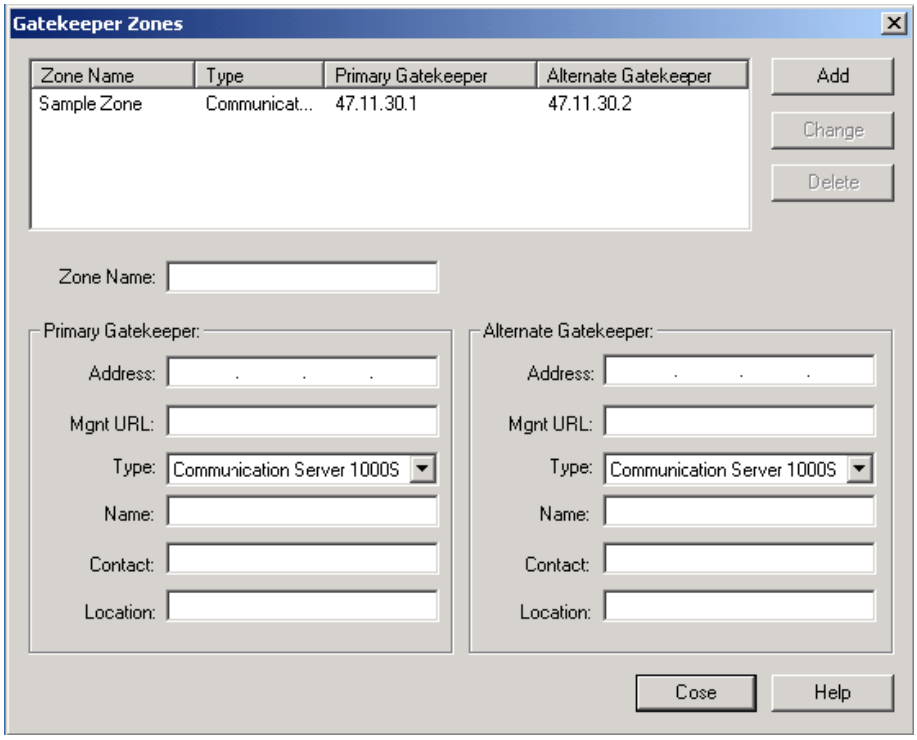
The Gatekeeper Zones dialog box is used to add, delete, and change gatekeeper zones.

Procedure 7
Adding a gatekeeper zone

1 In the System Properties dialog box — Network tab for a Meridian 1 system (Figure 28 on page 125) or a Call Server (Figure 29 on page 126), click **Edit** located next to the Gatekeeper Zone drop-down list.

The Gatekeeper Zones dialog box opens (Figure 40).

Figure 40
Gatekeeper Zones dialog box



2 Enter a Zone Name. The Zone Name is required and must be unique. The Zone Name appears in the Windows and Web Navigators.

3 Enter the IP Address of the Primary Gatekeeper.

4 Enter the management URL for the Primary Gatekeeper.

5 Use the drop-down list to select the type of gatekeeper:

- CS 1000 - for a Call Server
- Other - for a third-party non-Nortel gatekeeper

6 Enter a Name, Contact, and Location for the gatekeeper. These fields each have a maximum length of 30 characters. The Gatekeeper Name is required. The Contact and Location fields are optional.

7 If desired, you may assign an optional Alternate Gatekeeper to the zone by repeating steps 2 through 6 for the Alternate Gatekeeper.

8 Click **Add** to add the new gatekeeper zone to the list.

9 Click **OK** to close the Gatekeeper Zones dialog box and return to the System Properties dialog box—Network tab.

End of Procedure

Procedure 8
Modifying the information on a gatekeeper zone

1 In the System Properties dialog box—Network tab for a Meridian 1 system (Figure 28 on page 125) or a Call Server (Figure 29 on page 126), click **Edit** located next to the Gatekeeper Zone drop-down list.

The Gatekeeper Zones dialog box opens (Figure 40 on page 140).

2 Select a gatekeeper zone from the list.

3 Edit the fields as desired.

4 Click **Change**.

5 Click **OK** to close the Gatekeeper Zones dialog box and return to the System Properties dialog box—Network tab.

End of Procedure

Procedure 9
Deleting a gatekeeper zone

1 In the System Properties dialog box—Network tab for a Meridian 1 system (Figure 28 on page 125) or a Call Server (Figure 29 on page 126), click **Edit** located next to the Gatekeeper Zone drop-down list.

The Gatekeeper Zones dialog box opens (Figure 40 on page 140).

2 Select a gatekeeper zone from the list.

3 Click **Delete**.

4 Click **OK** to close the Gatekeeper Zones dialog box and return to the System Properties dialog box—Network tab.

End of Procedure

Adding a Generic system or device

You can add as many as 256 systems (including non-Meridian 1 systems such as SRG). You must have administrator privileges to add a system.

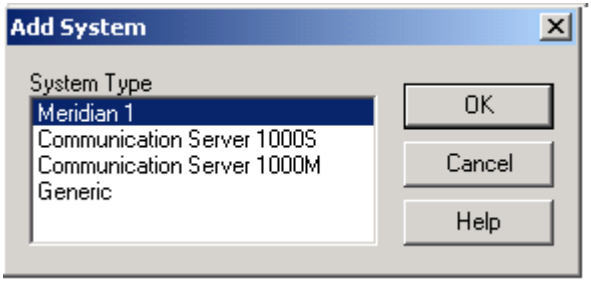
Procedure 10
Adding a Generic system

1 In the Navigator window, select the desired site.

2 Choose **Configuration > Add System**, or right-click and select **Add System**.

The Add System dialog box opens (Figure 41).

Figure 41
Add System dialog box—Generic



Note: You may need to install additional software to enable other system types not listed in Figure 41. Follow the installation instructions included with your order.

3 Select **Generic** in the System Type box.

4 Click **OK**.

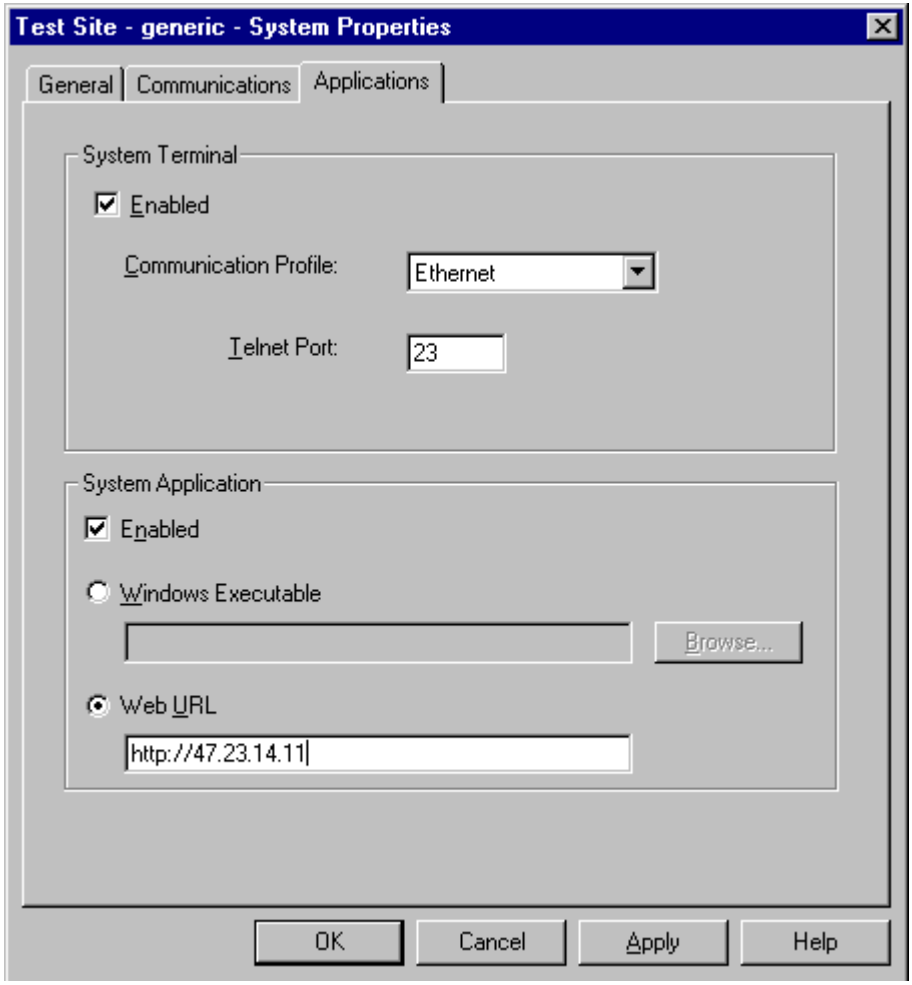
5 Complete the System Properties—General and System Properties—Communications dialog boxes as you do for a CS 1000 and Meridian 1 system.

In order to provide a visual association in the Navigator between SRG and its Main Office system, when naming an SRG system use the following naming convention: <MainOffice name> - <SRG name>.

6 Click **Application** tab.

The System Properties dialog box—Applications tab for non-Meridian 1 devices opens (Figure 42).

Figure 42
System Properties dialog box—Applications tab



7 In the System Properties dialog box—Applications tab, define the applications available for the device as follows:

- In the System Terminal section, select the communications profile. Typically, this is an Ethernet profile. Once defined, the user can double-click the system in the Windows Navigator to launch the Windows System Terminal, or open a web-based terminal window from the OTM Web Navigator Systems page, or both.
- In the System Application section, you have the option of launching a Windows executable or web browser page for managing the device.

If a Windows executable is selected, it can be accessed only from the Windows Navigator. If a URL is selected, the website can be accessed from either the Windows or Web Navigators.

The availability of a terminal connection, executable, or website depends on the device.

End of Procedure

IMPORTANT!

After you have added the new site or system, you must tell administrators of other OTM clients on your network to relaunch their OTM application so that they can see the new site or system.

Changing site information

You can change any information about a site, including the site name, address, and contact. You must have administrator privileges to change site information.

Procedure 11
Changing site information

1. In the Navigator window, select the desired site.
2. Choose **File > Properties**, or use the right mouse-button pop-up window. The Site Properties dialog box opens with the General tab displayed.
3. Bold fields indicate required information. To change a value, edit the field. Consult the online Help for details on any field.
4. To add a new system to this site, click **Add System**, and fill in information for the new system.
5. Click one of the following buttons:
   - **OK** saves the information and closes the dialog box.
   - **Cancel** closes the dialog box without saving.
   - **Apply** saves the information and leaves the dialog box open.
   - **Help** provides online Help.

End of Procedure

Changing system information

You can change any information about a system or its communications connection. You must have Administrator privileges to change any system information.

Procedure 12
Changing system information

1 In the Navigator window, select the desired system.

2 Choose **File > Properties,** or use the right mouse-button pop-up window.

The System Properties window opens.

3 Select the tab containing the information that you want to change.

Bold fields indicate required information. To change a value, edit the field or select a different item from a field pop-up window. An arrow within a field indicates a drop-down list of choices. Press the arrow to select from the list. Consult the online Help for details on any field.

4 Click one of the following buttons:

- **OK** saves the information and closes the dialog box.
- **Cancel** closes the dialog box without saving.
- **Apply** saves the information and leaves the dialog box open.
- **Help** provides online Help.

End of Procedure

Moving a Meridian 1 PBX 11C Cabinet or CS 1000 system

OTM does not allow you to move a system with associated Media Gateways from one site to another. This same limitation also applies to Meridian 1 PBX 11C Cabinet systems with Survivable IP Expansion Cabinets. You must remove the Media Gateways or Survivable IP Expansion Cabinets before moving the Call Server or Main Cabinet.

The Application data is not lost during this process.

Deleting a site or system

You must have administrator privileges to delete a site or system from the Navigator window. A record of the deletion is stored in the PC event file..

CAUTION — Service Interruption
Deletion of a site also deletes all of its systems.

When a system is deleted, all databases for that system are also deleted. Table 62 on page 733 describes the effects of deleting an ESN database type with a system. For more information see "Deleting databases" on page 731.

Procedure 13
Deleting a site or system

1 In the Navigator window, select the site or system.

To delete all sites and systems, select the Sites icon at the top of the tree.

2 Choose **Edit > Delete**.

3 Click **OK** to confirm.

End of Procedure

Changing your password

You can change your password at any time. If your password has expired, OTM prompts you to enter a new password when you attempt to log in.

Maintenance tasks

The guidelines and tables in this section indicate suggested scheduling of various OTM operating procedures.

Telecom Billing System

Refer to *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331) for complete details of the schedules for data collection, database maintenance, and data management. The database maintenance schedules outlined in this chapter should also be used for OTM Corporate Directories.

Call Tracking

Table 5 provides guidelines for scheduling Call Tracking maintenance tasks.

Table 5
Call Tracking maintenance tasks

Maintenance task	Schedule
Data collection (real time)	Continuously
Data collection (from a file)	Hourly
Review Alarm Log	No set schedule; review as needed
Backup and archive Call Tracking database	The main Call Tracking database is part of the site/system data files. This is backed up/archived with the other databases.
Restore Call Tracking database	As necessary

Traffic Analysis

Table 6 provides guidelines for scheduling Traffic Analysis maintenance tasks.

Table 6
Traffic Analysis maintenance tasks (Part 1 of 2)

Maintenance task	Schedule
Data collection (through direct connection to the system)	Hourly
Data collection (through buffer box or DBA)	Daily

Table 6
Traffic Analysis maintenance tasks (Part 2 of 2)

Maintenance task	Schedule
Backup/Archive Traffic database	Archive the Traffic database monthly. Remember to purge old or unneeded data from the working directory during this Archive procedure.
Restore Traffic database	As necessary

OTM Site/System data

Table 7 provides guidelines for scheduling OTM Site/System data maintenance tasks.

Table 7
OTM Site/ System data maintenance tasks

Maintenance task	Schedule
Backup Employee database	Weekly
Backup all other databases (OTM Corporate Directories) for site/system	Monthly
Restore databases for site/system	As needed
Since the Employee database is usually edited more frequently, you should back up the database on a weekly instead of monthly basis (as with the other OTM databases).	

Compact and Repair Utility

See "Database Compact and Repair" on page 283

Regional Settings

Currency Settings, located under Regional Settings, includes information about local and alternate currencies. OTM applications use this information to display costs.

Local Currency

The Local Currency tab contains information about the local currency that is used to display costs inOTM applications. This is useful in situations where a single system manages and processes data from many countries and you want to report costs in different currencies across different systems. Each system can represent sites in different countries. Their costs can then be expressed in their respective local currency.

Currency information, by default, is derived from the client PC's regional settings. However, there are cases where systems are required to operate with different currencies. To facilitate this, OTM allows you to define currency settings for any system as required. In addition, you can configure default settings from the OTM Navigator main window, which can also be used by the OTM systems. These default settings are used by any system that does not have its own settings defined. This is useful in an installation where the majority of systems are operating in a common currency and only a few are operating in a different currency. In this case, you can set the default currency settings for the majority of the systems, and you only need to configure the exceptions.

To define the local currency, select **Configuration > OTM Regional Setting**s in either the OTM Navigator window or the system window. Select from the following options:

Use System Setting (Navigator level only): Select this check box to have OTM use the currency settings defined in the client PC's Windows Regional Settings. Notice that the remaining fields are updated with the Windows Regional Settings currency information and appear grayed (read-only). You cannot edit these fields if you select this option. Since this option is available only at the Navigator level, you can only select this option for the Navigator main window. By default, this option is enabled (the check box is selected).

Use Default Setting (System level only): Select this check box to have the system use the default currency settings that you defined in the Navigator window. Notice that the remaining fields are updated with this default (or shared) currency information and appear grayed (read-only). You cannot edit these fields if you select this option. This option is available only from a system window.

Enter the local currency values in the following fields:

Currency Name: In this field, enter a descriptive name of this currency (for example, US Dollars).

Appearance Samples: These read-only fields display samples of the costs based on the selected currency settings (for example, $123,456.78 and ($123,456.78)).

Currency Symbol: In this field, enter the symbol for this currency (for example, $). The symbol appears next to the cost values on report summaries. If your keyboard does not support the currency symbol that you want to use, then you may need to enter it using alternate key codes. For example, to enter the symbol for the Euro dollar, press and hold the [Alt] key and enter **0128** on your numeric keypad. The Euro dollar symbol appears. If a black square appears instead of the symbol, then your system font does not support this character. It should, however, still appear correctly on the printed report.

Position of Currency Symbol: From this drop-down list box, select how the currency symbol will appear next to cost values. The "*" represents where the symbol appears with respect to the value. For example, *1.1 indicates that the currency symbol will appear before the values (for example, $1.00).

Negative Number Format: From this drop-down list, select how negative values will appear. For example, (*1.1) indicates that negative numbers appear with parentheses around them (for example, ($1.00)).

Decimal Symbol: In this field, enter the symbol that will be used for the decimal (for example, for the amount $1,000.00, enter**.**).

Number of Digits after Decimal: In this field, enter the total number of digits that will appear after the decimal (for example, for the amount $1,000.00, enter **2**).

Digit Grouping Symbol: In this field, enter the symbol that will be used to separate digit groups when displaying currency values (for example, for the amount $1,000.00, enter **,**).

Number of Digits in Group: In this field, enter the number of digits that will be separated by the digit grouping symbol (for example, for the amount $1,000.00, enter **3**).

Once you have entered these settings, click **Apply** to save them and remain in this tab. Click **OK** to save these settings and exit to the previous window.

Alternate Currency

The Alternate Currency tab contains information about any alternate currencies used when displaying costs in OTM reporting. This is useful in situations where you want to have reports display monetary values in two separate currencies. For example, European countries could display summary costs in their local currencies and in the new Euro currency.

You can either define the alternate currency settings for specific systems, or have them use the default settings defined in the Navigator level. The alternate currency defined in the Navigator window is used as the default alternate currency. Any systems that do not have alternate currency settings defined for them use the default currency settings defined at the Navigator level. As well, you can specify that a system should use the default currency settings.

Procedure 14
Defining the alternate currency

1 To define the alternate currency, select **Configuration > OTM Regional Settings** from either the OTM Navigator window or the system window. Select from the following options:

Use Default Setting (System level only): Select this check box to have the system use the default alternate currency settings you entered in the Navigator window. Notice that the remaining fields are updated with this currency information and appear grayed (read-only). You cannot edit these fields if you select this option. This option is only available from a system window.

Enable Alternate Currency (Navigator and System level): Select this check box to enable alternate currency settings to appear on system billing reports. If you disable this option (that is, clear this check box), the remaining fields appear grayed (read-only), and the alternate currency is not included in your reports.

2 Enter the alternate currency values in the following fields:

Currency Name: In this field, enter a descriptive name of this currency (for example, US Dollars).

Appearance Samples: These read-only fields display samples of the costs based on the selected currency settings (for example, $123,456.78 and ($123,456.78)).

Currency Symbol: In this field, enter the symbol for this currency (for example, **$**). This appears next to the cost values on report summaries. If your keyboard does not support the currency symbol that you want to use, then you may need to enter it using alternate key codes. For example, to enter the symbol for the Euro dollar, press and hold the [Alt] key and enter **0128** on your numeric keypad. The Euro dollar symbol appears. If a black square appears instead of the symbol, then your system font does not support this character. It should, however, still appear correctly on the printed report.

Position of Currency Symbol: From this drop-down list box, select how the currency symbol will appear next to cost values. The "*" represents where the symbol appears with respect to the value. For example, *1.1 indicates that the currency symbol appears before the values (for example, $1.00).

Negative Number Format: From this drop-down list box, select how negative values will appear. For example, (*1.1) indicates that negative numbers appear with parentheses around them (for example, ($1.00)).

Decimal Symbol: In this field, enter the symbol that will be used for the decimal (for example, for the amount $1,000.00, enter **.**).

Number of Digits after Decimal: In this field, enter the total number of digits that will appear after the decimal (for example, for the amount $1,000.00, enter **2**).

Digit Grouping Symbol: In this field, enter the symbol that will be used to separate digit groups when displaying currency values (for example, for the amount $1,000.00, enter **,**).

Number of Digits in Group: In this field, enter the number of digits that will be separated by the digit grouping symbol (for example, for the amount $1,000.00, enter **3**).

Currency Exchange Rate: In this field, enter the exchange rate for this currency against the local currency. For example, if the local currency is the U.S. dollar (US$), and the alternate currency is the Canadian dollar (Can$), and the exchange rate is 1.49, then enter **1.49** in this field. This means that US$1.00 is equivalent to Can$1.49.

3 Once you have entered these settings, click **Apply** to save them and remain in this tab. Click **OK** to save these settings and exit to the previous window.

End of Procedure

Access Server

The Access Server provides a Command Line Interface (CLI) for remote access to the OTM Server. From a remote terminal, you can dial in through a modem or through a direct serial connection to access the OTM Server.

Caution: Access Server must run under the Windows Operating System, as it does not function properly under any other operating system.

Once successfully logged in, you can do the following:

- Change Windows user passwords.
- Connect to different sites and systems as configured in Virtual Terminal Service. See “Virtual System Terminal” on page 757

Note: CLI needs a dedicated modem. CLI cannot share the modem with other services.

Caution: If you are not using Access Server, be certain that the Auto Launch check box is cleared (Figure 44 on page 154). This action prevents unnecessarily tying up a COM port on the server.

CLI status window

The CLI launches at OTM Server startup. The status window displays CLI status messages.

View the CLI status window

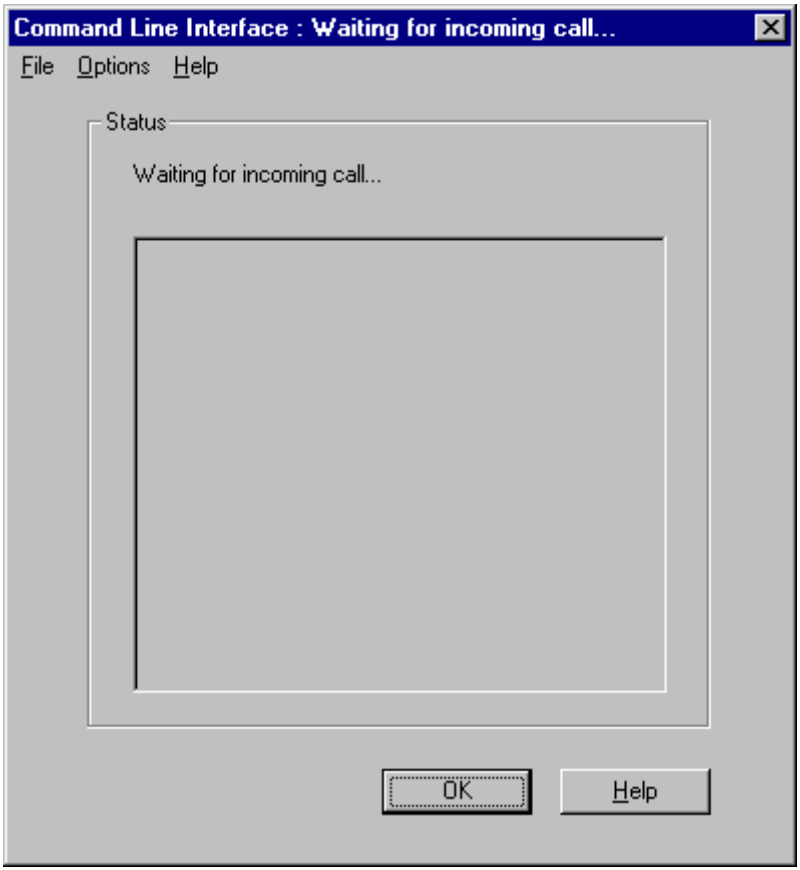
From the Start menu, choose **Programs > Optivity Telephony Manager > Command Line Interface**.

The CLI status window opens (Figure 43).

The following status messages may appear in the CLI window:

- Waiting for incoming call
- Answer call and authentication process in progress

Figure 43
CLI status window



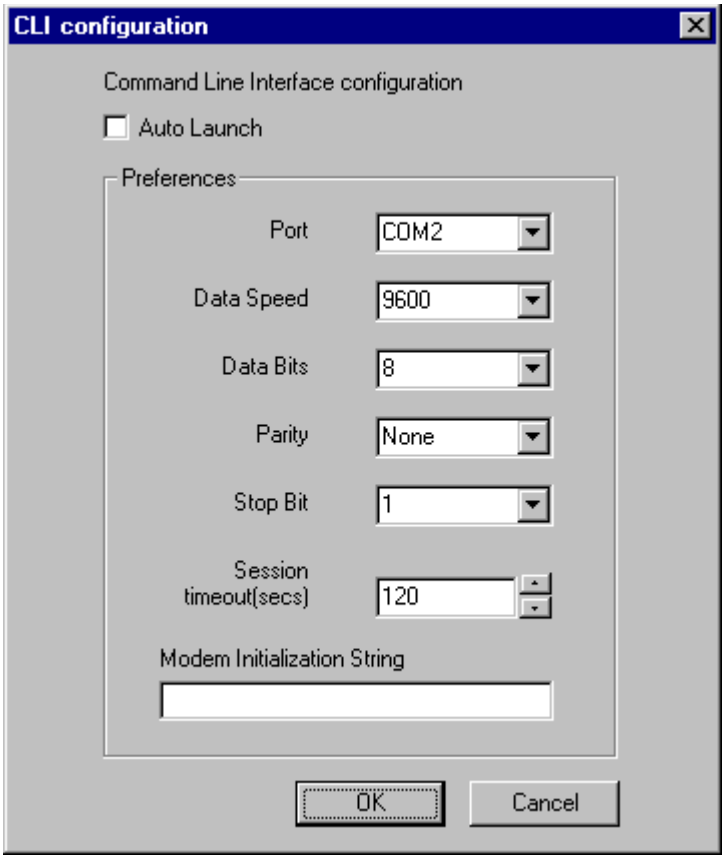
CLI configuration

The CLI configuration dialog box is used to define the following OTM Server COM port settings:

Port - list of COM ports on the OTM Server
Data Speed of COM port - 4800, 9600, 19,200, 38,400
Data Bits - 5, 6, 7, 8 bits
Parity - None, Odd, Even Mark, Space
Stop Bits - 1, 1.2, 2 bits
Session timeout (secs)- If current session is idle for the specified time, CLI disconnects the call.

To open the CLI configuration dialog box, select **Options > Configure..**. in the CLI status window. The CLI configuration dialog box opens (Figure 44).

Figure 44
CLI configuration dialog box

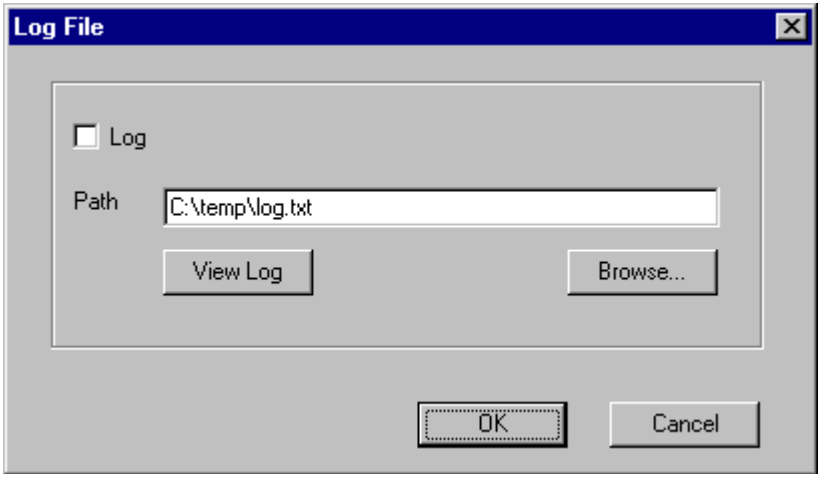


CLI Log File dialog box

The CLI Log File dialog box allows you to turn the log option on or off and specify the log file location as shown in Figure 45. The Log File logs all activities: user login, commands, and so on.

To open the CLI Log File dialog box, select **Options > Log File...** in the CLI status window.

Figure 45
CLI Log File dialog box



CLI Operation

Procedure 15
Operating CLI

1. From a PC other than the OTM Server, dial into CLI on the OTM Server using HyperTerminal or an equivalent Telnet application.
2. Enter an OTM login name and password to log in. Once logged in, the following commands are available:

   - Help or ? - lists all commands
   - Status - lists all VTS ports associated with configured systems
   - Connect - connects to a system
   - Exit - disconnects

Figure 46 on page 156 and Figure 47 on page 156 show the CLI commands.

Figure 46
CLI Help commands

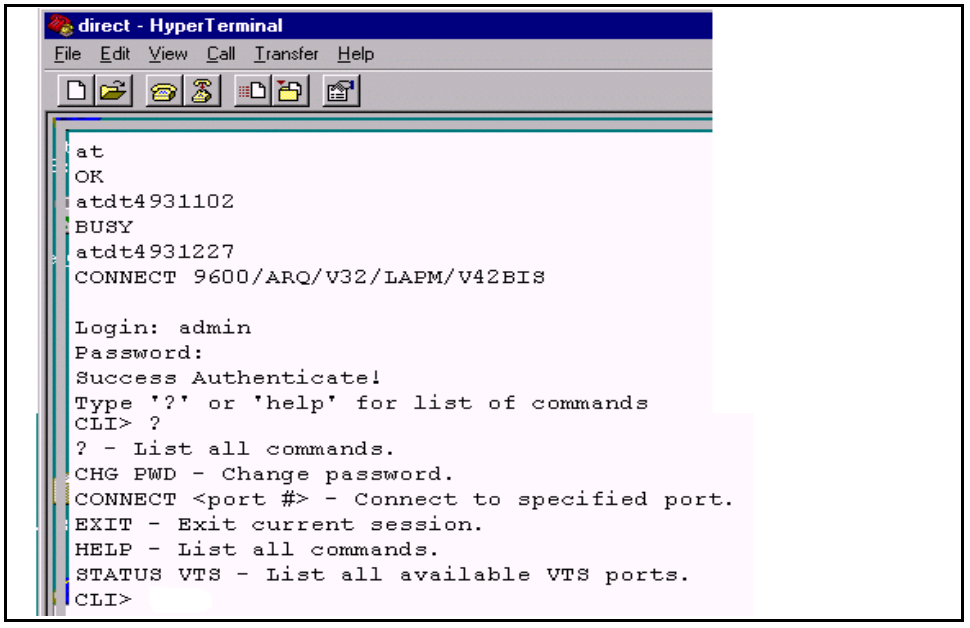
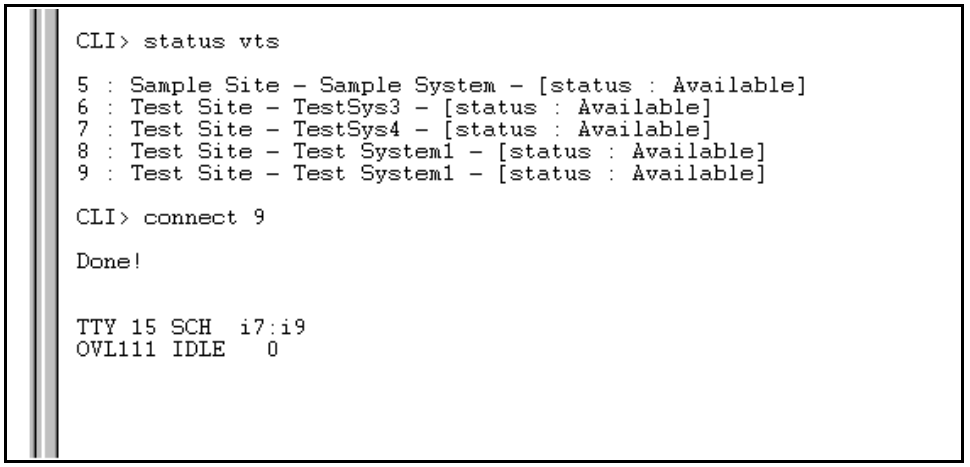


Figure 47
CLI Status and Connect commands


CLI> status vts
5 : Sample Site - Sample System - [status : Available]
6 : Test Site - TestSys3 - [status : Available]
7 : Test Site - TestSys4 - [status : Available]
8 : Test Site - Test System1 - [status : Available]
9 : Test Site - Test System1 - [status : Available]
CLI> connect 9
Done!
TTY 15 SCH i7:i9
OVL111 IDLE 0

End of Procedure

Communication

Both the Terminal Server (OTM Server) and Terminal Client (Remote PC) can detect when their TCP socket connection is lost. In that case, they log the error or notify the user, or both, and reset themselves for another connection.

The base port number determines the range of socket ports used to communicate with the Terminal Client. Under normal conditions, this should be left as is, and should not be changed unless the default port conflicts with another network application.

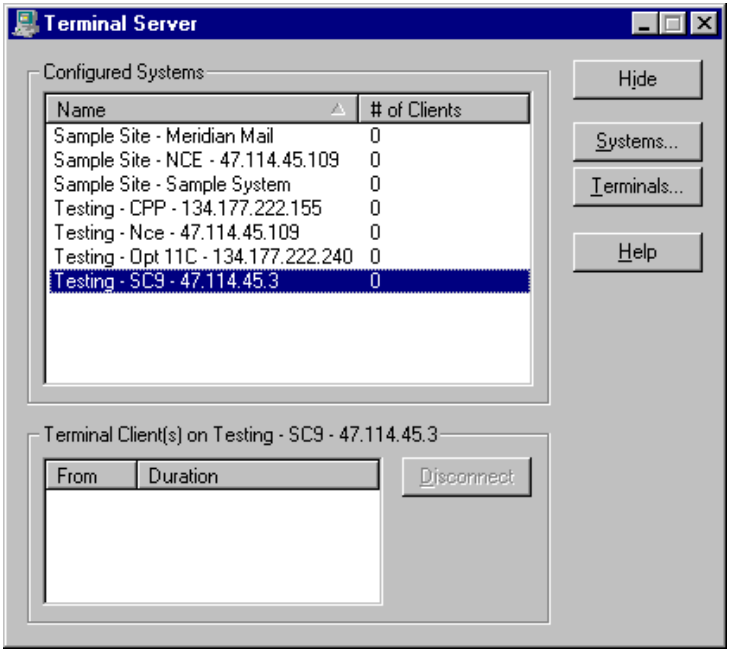
By default, the Terminal Server and Terminal Client communicate using network ports 4789 through 5045 (4789 to send connection requests, 4790-5045 for up to 256 terminal sessions). The number of ports actually used depends on the number of virtual ports configured.

Procedure 16
Changing the range of port numbers

1 From the Start menu, select **Programs > Optivity Telephony Manager > Terminal Server**.

The Terminal Server dialog box opens as shown in Figure 48.

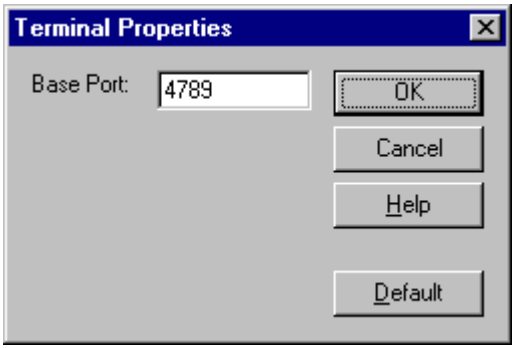
Figure 48
Terminal Server dialog box



2 Click **Terminals**.

The Terminal Properties dialog box opens (Figure 49).

Figure 49
Terminal Properties Base Port parameter



3 Enter the new Base Port number, and then click **OK**.

4 Edit the HTML page containing the applet. Ensure the applet's Base Port parameter matches the one in the Terminal Properties (default = 4789).

End of Procedure

Encryption

Data is encrypted so that someone monitoring the network traffic does not see plain ASCII data (which may contain user login, password, or other sensitive information).

Every packet sent between the Terminal Server and the Terminal Client is 65 bytes and contains data that is masked with a key. This ensures that data is not easily readable, while keeping the overhead low for constant character Input/Output (I/O).

Before sending a packet, the application picks a random location in a 256-byte key (known only to the server and the client), and uses the subsequent bytes to mask the character data. In essence, every packet is masked with one of 256 possible keys.

OTM Directory Services

The OTM Directory Services enables you to input end user data through the OTM applications, such as Station Administration and Telecom Billing System, directly into the customer's server. OTM Directory contains employee and organization details, with a number of fields that are common to both Directory and Station Administration.

There is one OTM Directory database and one Station database per system. The OTM Server supports multiple systems.

OTM Directory provides a number of tools to configure your company structure and create an employee database:

- an Organization Hierarchy editor to define your business organization
- an Employee Editor to manage user data
- an External Party editor to configure external party records
- a Roles/Project editor to create role and project groups within the organization
- synchronization utilities to update Station Administration with all the changes made to Directory data

The data is scheduled for synchronization from the Utilities menu in the Navigator window. See "LDAP synchronization" on page 310.

Organizational Hierarchy Editor

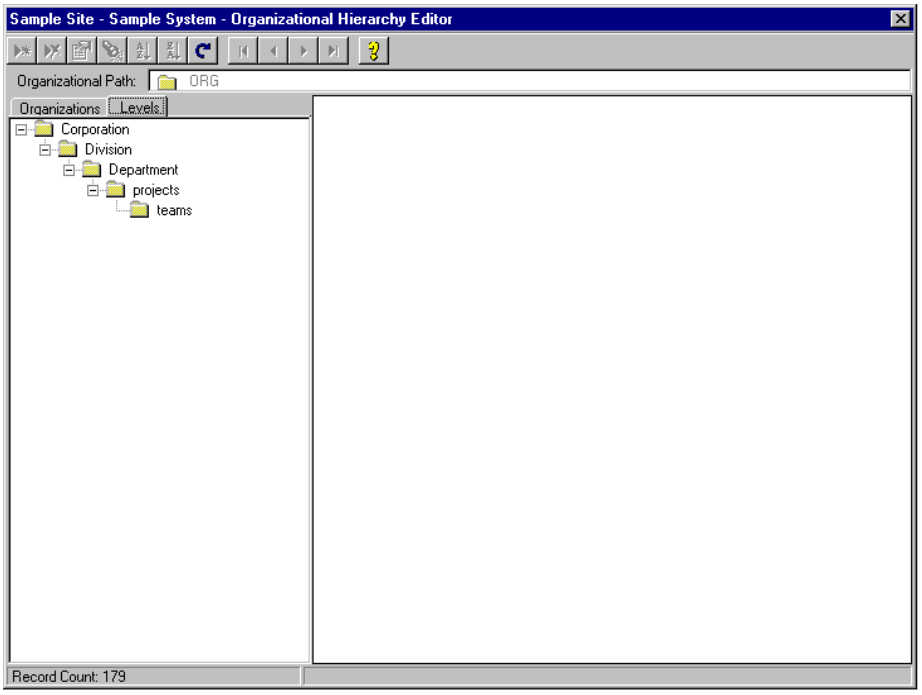
The Organizational Hierarchy Editor allows you to create and edit the structure of your company. You build an organization tree representing the different organization nodes in your corporation, such as divisions, departments, projects, and project teams. You can place each organization node at its level in the hierarchy. After defining an organization node in the structure, you can assign employees to the node using the Org. Path field in the Employee Editor.

Access the Organizational Hierarchy Editor

To access the Organizational Hierarchy Editor, in the Station Administration window select **View > Organizational Hierarchy**.

The Organizational Hierarchy window is where you define the structure of your organization (Figure 50). The left side of the window shows the organization hierarchy tree. The right side of the window is the Employee Selector, providing a list of employees related to the selected organization node.

Figure 50
Organizational Hierarchy Editor—Levels tab



Define organization levels

Before you begin adding organization nodes to the tree, define the levels of the organizations in your company. The levels represent the structure of your company. For example, the company can have divisions, departments within divisions, and projects within departments. You can define a maximum of 20 different levels.

Procedure 17
Defining organization levels

1. Click the **Levels** tab. The tree displays the levels defined for the structure. If you have not yet entered the structure for your organization, the window contains a default menu tree with the Organization, Division, and Department levels.
2. Click the lowest level to define a new level.
3. Right-click mouse to open the Add New Level dialog box.
4. Type the name of the new level and click **Enter**.

To delete a level, click the right mouse-button on the lowest entry and select **Delete.**

End of Procedure

As shown in the example in Figure 50, the levels are defined as:

- Corporation
- Divisions within the corporation
- Departments within the division
- Projects within the department
- Employee teams within the project

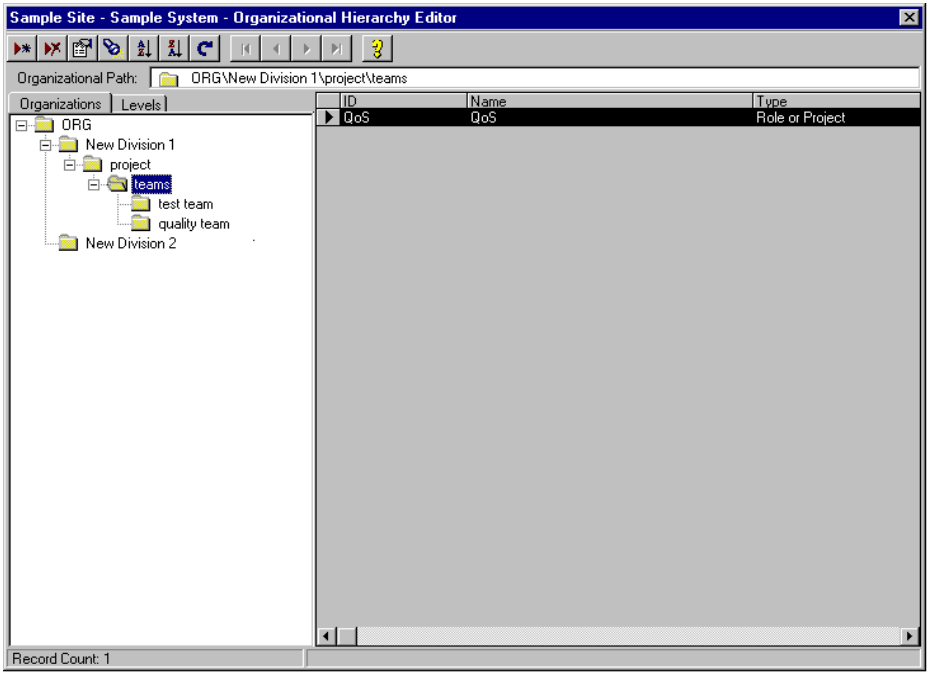
Add an organization node

You must define an organization level before you can add an organization node at that level. See “Define organization levels” on page 160

Procedure 18
Adding an organization node

1. Select the **Organizations** tab (Figure 51).
2. Select the name of the organization in the tree where you want to add a new organization node. For example, if adding a new department to a division, select the name of the division.
3. Click the right mouse-button and select **Add New Node**. The new node appears in the tree. For example, if adding a new division, Division appears in the tree.
4. Type the name of the new node and click **Enter**. Type over the name. To rename the node, click the right mouse-button and select **Rename** to give the node a new name.

Figure 51
Organizational Hierarchy Editor—Organizations tab



End of Procedure

Delete an organization node

Procedure 19
Deleting an organization node

1. Select the organization node in the tree.
2. Click the right mouse-button and select **Delete**. A dialog box opens that asks you to delete the node.
3. Click **Yes**. The node disappears from the tree.

End of Procedure

Employee Selector Window

The right pane of the Organizational Hierarchy window consists of the Employee Selector window.

The Employee Selector window also appears as an individual window by clicking Directory in the Station Set window.

This window displays the list of current Employee entities in the Directory database, and allows you to create a new employee entity, add it to your organizational node, and edit the details of an existing entity.

The icons in the Organization Hierarchy toolbar allow you to edit the Employee records listed or create new Employee, Roles/Projects, or External Parties records to be added to your organizational node. As they appear from left to right, they allow you to:

- **Add new record**: Select a record type (Employee, External Party, Role/Project) from the Entity Selector. You can then add a new Employee record to the database (which opens the Employee Editor), or add a new Roles/Projects record (which opens the Roles/Projects Editor) or a new External Party record (which opens the External Party Editor).

  Note: Do not input spaces in the names of Roles/Projects.

- **Delete record**: Delete the selected record from the database. See "Delete employees" on page 164.
- **Edit Record**: Edit the selected record. This opens the corresponding Editor window (e.g. Employee Editor, External Party Editor, or Roles and Projects Editor), in which you can edit the Record details.
- **Find**: Search for a specific record. Enter a text string and select a field from 'ID', 'Entity Type' or 'Name' by which to search the database. See "Search for an employee" on page 165.
- **Sort Ascending**: Sort the employee records in ascending order. See "Sort the employee list" on page 166.
- **Sort Descending**: Sort the employee records in descending order.
- **Refresh View**: Refresh the list following changes.
- **Move First/Previous/Next/Last**: Move the cursor to the top of the list, to the previous entity to the one selected, to the next entity to the one selected, or to the end of the list.
- **Help**: Consult the online Help system.

Add an employee to an organization node

Procedure 20
Adding an employee to an organization node

1. Select the organization node in the tree.
2. Click **Add** (the toolbar button with the plus sign). The Entity Type Selector window opens.
3. You have the option to add a new Employee, External Party or Role/Project. When you select a type, the Editor for that type appears. In this case, select Employee.
4. The Employee Selector window opens. Select the employee you want to assign to the selected organization node.

End of Procedure

Edit employee data

Procedure 21
Editing employee data

1. Select the organization node in the tree. The names of the employees appear in the Employee Selector window.
2. Select the name of the employee you want to edit.
3. Click **Edit** (the Toolbar button with the pencil). The Employee Editor opens. See “Edit employee data” on page 173.

End of Procedure

Delete employees

Procedure 22
Delete an employee from an organization node

1. Select the organization node in the tree. The names of the employees appear in the Employee Selector window.
2. Select the employee you want to delete.
3. Click **Delete** (the Toolbar button with the X). The employee disappears from the list.

   This action deletes the Employee from the Organizational Node, but the Employee Entity still exists in the OTM Directory database. The Entity can only be removed

from OTM Directory through the Employee Selector window, as accessed through the Directory button in Station Administration.

End of Procedure

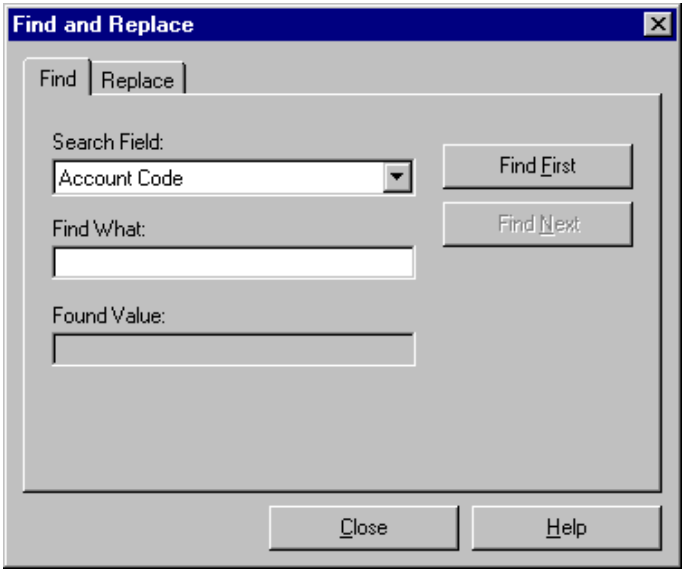
Search for an employee

Procedure 23
Searching for a specific employee

1 Select the organization node in the tree.

2 Click **Search** (the Toolbar button with the flashlight). The Find and Replace dialog box opens (Figure 52).

Figure 52
Find and Replace dialog box



3 Select the field you want to search from the drop-down list.

4 Enter the character string to search for in the Find What box.

5 Click one of the following buttons:

- **Find First** - Finds the first occurrence of the character string
- **Find Next** - Finds the next occurrence of the character string
- **Close** - Ends the search

If the search finds a match, the employee's name appears highlighted in the Employee Selector window.

End of Procedure

Sort the employee list

Procedure 24
Sorting the employee list

1 Select the organization node in the tree.

2 Click the column header of the column you want to sort in the Employee Selector window.

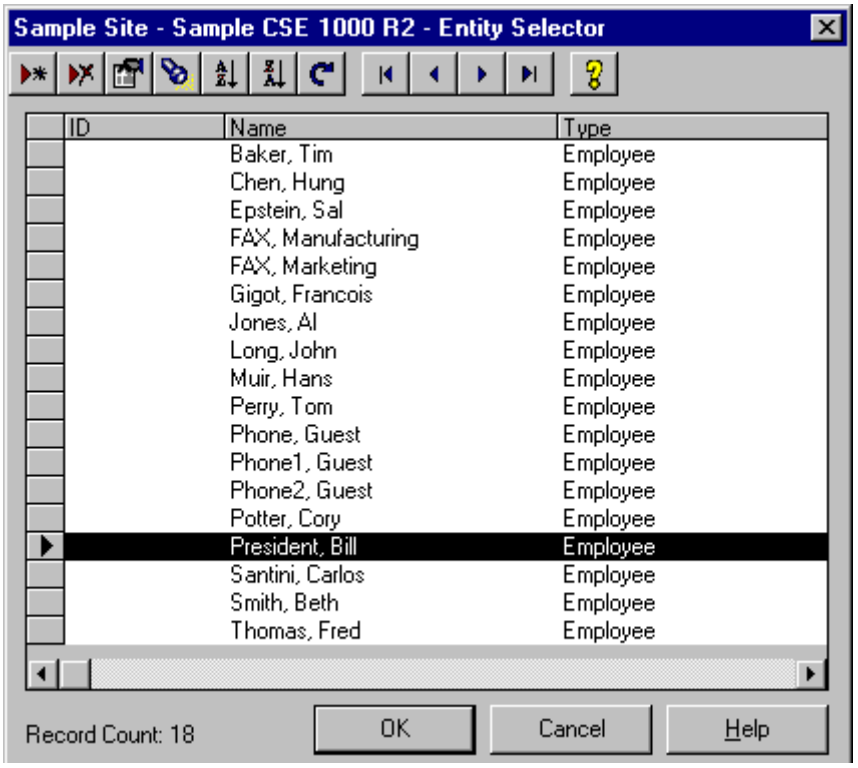
3 Click **Sort Assending** or **Sort Desending** (the toolbar buttons with AZ Up or AZ Down).

End of Procedure

Employee Editor

To access, select **Employee Selector** in the View menu. The Employee Editor allows you to add new employees and update employee personal and job related data. The tabs on the right side of the window allow you to define the assets assigned to the employee. You can also define the property assigned to the employee, such as telephone and terminal numbers.

Figure 53
Enity Selector dialog box



Access the Employee Editor

There are several ways to access the Employee Editor:

- Click **Add** or **Edit** in the Organizational Hierarchy Editor window.
- Double-click an employee's name in the Employee Selector window.

Procedure 25
Adding a new employee

1 The Employee Editor dialog box opens with the Employee tab selected. The fields are blank. Enter the employee data as follows:

a. Enter the employee information in the appropriate fields.

b. How you access the Employee Editor determines if the Org. Path field shows a drop-down selection box or not. If the drop-down list is active, the organization structure tree displays. Select the organization node for the employee from the tree. If the drop-down list is not active, type the path to the organization node for the employee.

c. From the Manager field drop-down list, select the employee's manager.

d. Click the envelope icon next to the Email field to enter the employee's default e-mail address or type the e-mail address. This sends e-mail to the employee with a corporate Lightweight Directory Access Protocol (LDAP) compliant server.

Note: Ensure that you type a valid e-mail address as this field is not validated.

e. Select **Publish** check box to enable synchronization with an LDAP-compliant server. See "LDAP synchronization" on page 310 for more information.

2 Enter the asset information as follows:

a. Select **New Asset** in the Type column. The edit boxes below the grid become active.

b. Select the type of asset from the drop-down list in the Type field.

The asset types available identify the employee in the different OTM applications. Select from Account Code, Authorization Code, Extension, Phone Number, or Trunk Number. Based on the type selected, a corresponding field entry appears, into which you enter a value.

c. If the employee is the prime user of this asset, select the Prime check box. This allows several employees to use the same asset, while one employee in particular is the main owner of the asset and is assigned the cost.

d. Select the **Publish** check box to share the employee asset information. Do not select the check box if the information is private.

e. Click **Apply**.

f. Click one of the following buttons:

- **OK** - Saves the employee information and closes the window.
- **Apply** - Applies the information configured.
- **Apply/New** - Saves the employee information and leaves the window open. The window is blank so you can add another new employee.
- **Cancel** - Closes the window without saving the employee information.
- **Help** - Accesses the online Help system.

End of Procedure

Enable web desktop access

You can give end users an account on the OTM Server using the same process that is used to allow Administrators and HelpDesk users to access the Windows and Web Navigators; however, end users are typically authenticated through a Windows domain account or LDAP. Endusers do not normally have accounts on the OTM Server. For information on configuring user groups for web access, see "User groups" on page 854. When the Windows domain or LDAP authentication method is used, use the OTM directory to map the following attributes:

- Login name - Required to associated users with their telephones
- User group - Determines what the user can see and changes that they can make on their telephones
- Web Reporting Access Rights - Controls access to Web TBS billing reports

Procedure 26
Enabling web desktop access

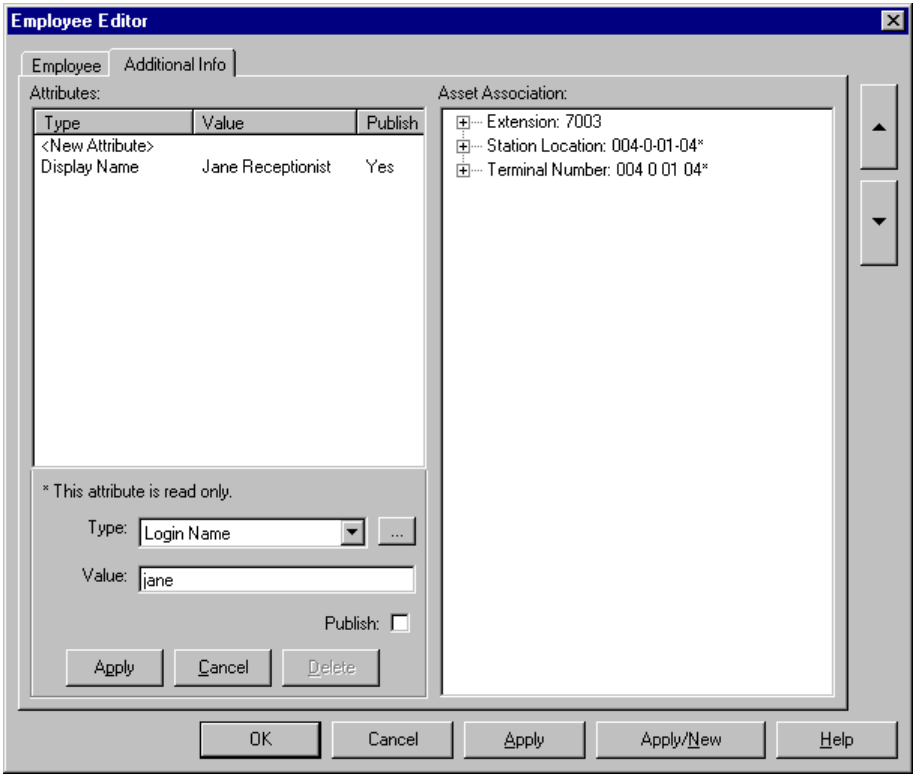
1 From Station Administration, select **View > Employee Selector**.

2 Double-click an employee's name in the Employee Selector window.

The Employee Editor window for the selected employee opens.

3 Click the **Additional Info** tab in the Employee Editor dialog box. The Employee Editor dialog box—Additional Info tab opens (Figure 54).

Figure 54
Employee Editor dialog box—Login name attribute



4 Select **<New Attribute>** in the Attributes pane.

5 Select **Login Name** from the Type drop-down list.

6 Enter the user's Windows login name for the attribute Value (or Unique Identifier if using LDAP authentication).

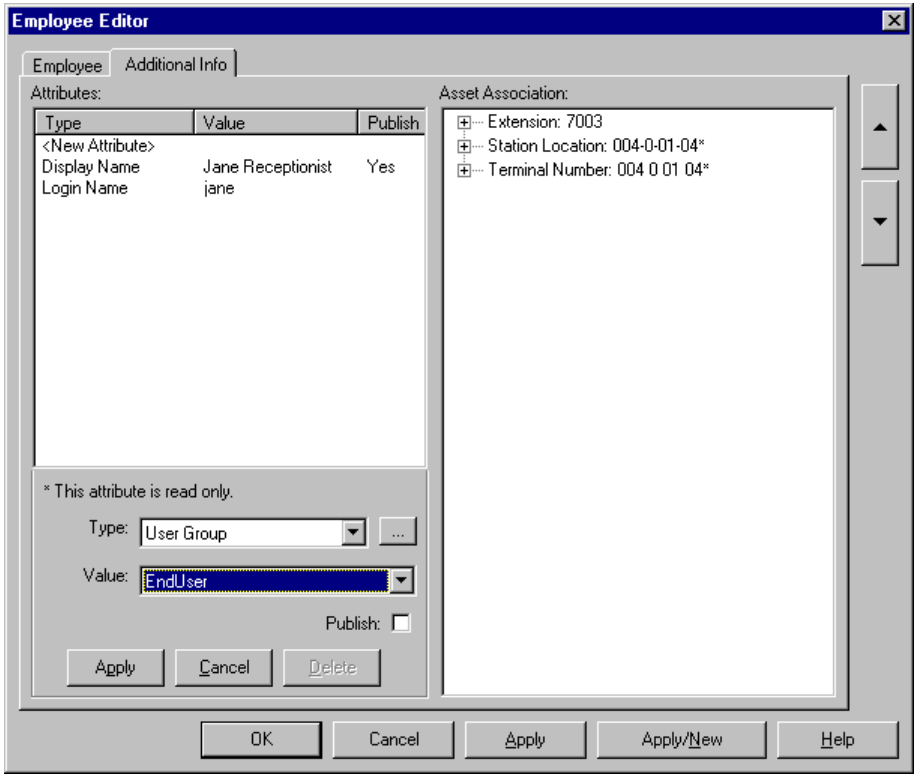
7 Select the **Publish** check box to enable synchronization with an optional LDAP compliant server.

8 Click **Apply** in the Attributes pane.

9 Select <New Attribute> in the Attributes pane.

10 Select **User Group** from the Type drop-down list (Figure 55).

Figure 55
Employee Editor dialog box—User Group attribute



11 Select **EndUser** from the drop-down list for the attribute Value to enable End User web desktop user access - both for LDAP and Windows access.

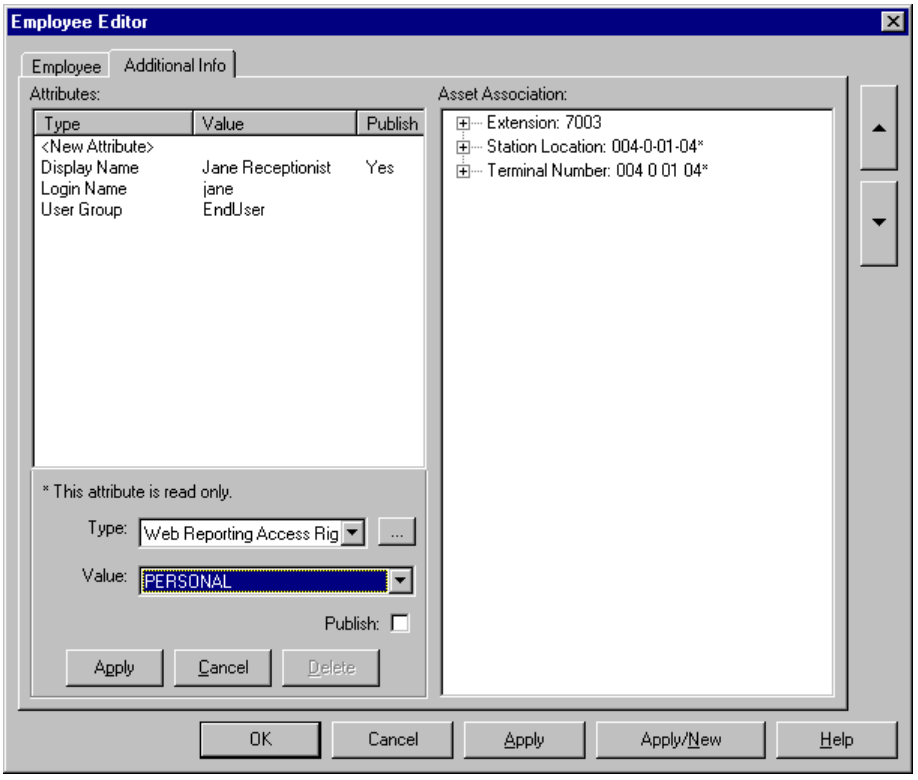
Select **HelpDesk** from the drop-down list for the attribute Value to enable Help Desk web desktop user access - both for LDAP and Windows access.

12 Click **Apply** in the Attributes Pane.

13 Select **<New Attribute>** in the Attributes pane.

14 Select **Web Reporting Access Rights** from the Type drop-down list (Figure 56).

Figure 56
Employee Editor dialog box—Web Reporting Access Rights attribute



15 Select one of the following access levels from the drop-down list for the attribute Value:

- All - Users assigned this role have the authority to view all the reports for the site/systems to which they are assigned. This is the access level that you typically assign to an Administrator.
- Peer - Users assigned this role have the authority to view the reports for all the entities in the same node in the Organizational Hierarchy and all its sub-nodes. See “Organizational Hierarchy Editor” on page 159. This is the access level that you typically assign to a person who manages several departments.
- Managed - Users assigned this role have the authority to view their own reports and the reports for all of the entities in the subnodes below their organization node in the Organizational Hierarchy. See “Organizational Hierarchy Editor” on

page 159. This is the access level that you typically assign to a department manager.

- Personal - Users assigned this role have the authority to view their own data. This is the access level that you assign to a non-managerial employee.
- No Access - If no role is assigned for a user, their reporting access rights default to No Access.

16 Click **Apply**.

Click one of the following buttons:

- **OK** - Saves the employee information and closes the window.
- **Apply/New** - Saves the employee information and leaves the window open. The Up and Down arrows appear on the right side of the window. Use these arrows to scroll to another employee record for updating.

End of Procedure

Edit employee data

Procedure 27
Editing employee data

1 Click the **Employee** tab in the Employee Editor window. The selected employee data appears.

2 Edit the employee data as follows:

a. Edit the employee information in the appropriate fields.

b. How you access the Employee Editor determines if the Org. Path field shows a drop-down selection box or not. If the drop-down list is active, the organization structure tree displays. Select the organization node for the employee from the tree. If the drop-down list is not active, type the path to the organization node for the employee.

c. From the Manager field drop-down list, select the employee's manager.

d. Click the **envelop** icon next to the Email field to automatically enter the employee's default e-mail address or type the e-mail address.

e. Select the **Publish** check box to share the employee information. Do not select the check box if the information is private.

f. Click one of the following buttons:

- **OK** - Saves the employee information and closes the window.
- **Apply/New** - Saves the employee information and leaves the window open. The Up and Down arrows appear on the right side of the window. Use these arrows to scroll to another employee record for updating.
- **Cancel** - Closes the window without saving the employee information.

3 Edit the property information as follows:

a. Select the property you want to edit from the list of property in the grid at the right of the window. The edit boxes below the grid display the current values.

b. Change the information in the edit boxes. If the property is new, the system automatically selects the Prime field.

c. Click **Apply**.

End of Procedure

Delete employee property

Procedure 28
Deleting property assigned to an employee

1 Select the property you want to delete from the list of property in the grid at the right of the Employee Editor window.

2 Click **Delete** located below the grid.

End of Procedure

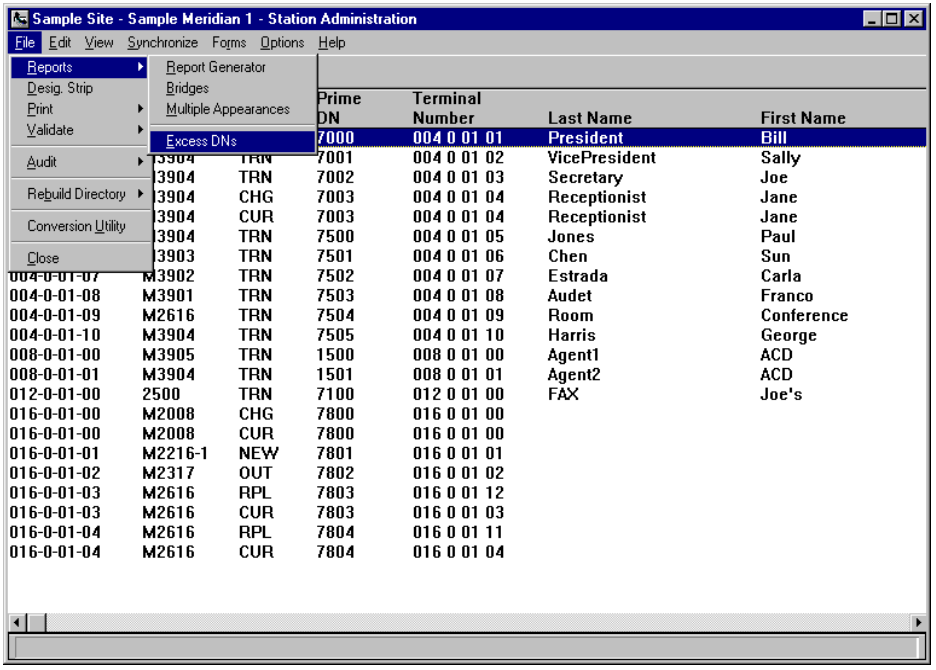
Excess DN report

An employee listing in the Directory lists all the extensions associated with the employee. Normally, each of these extensions matches a DN in Station Administration. However, when a set (and with it the DN) is deleted from Station Administration, the corresponding entry in the Directory is not removed. The old extensions remain in the Directory to provide information to billing department. Thus there is a possibility that some of the extensions in the Directory do not match with any DNs in Station Administration. These extensions are termed Excess DNs.

Station Administration has a facility to print off a report which lists these excess DNs against their owner employee.

This report can be run by selecting File > Reports > Excess DNs in the Station Administration window (Figure 57).

Figure 57
Excess DNs menu


Sample Site - Sample Meridian 1 - Station Administration
File Edit View Synchronize Forms Options Help
Reports
Desig. Strip
Print
Validate
Audit
Rebuild Directory
Conversion Utility
Close
Report Generator
Bridges
Multiple Appearances
Excess DNs
Prime DN
Terminal Number
Last Name
First Name
7000 004 0 01 01 President Bill
7001 004 0 01 02 VicePresident Sally
7002 004 0 01 03 Secretary Joe
7003 004 0 01 04 Receptionist Jane
7003 004 0 01 04 Receptionist Jane
7500 004 0 01 05 Jones Paul
7501 004 0 01 06 Chen Sun
7502 004 0 01 07 Estrada Carla
7503 004 0 01 08 Audet Franco
7504 004 0 01 09 Room Conference
7505 004 0 01 10 Harris George
1500 008 0 01 00 Agent1 ACD
1501 008 0 01 01 Agent2 ACD
7100 012 0 01 00 FAX Joe's
7800 016 0 01 00
7800 016 0 01 00
7801 016 0 01 01
7802 016 0 01 02
7803 016 0 01 12
7803 016 0 01 03
7804 016 0 01 11
7804 016 0 01 04
004-0-01-08 M3901 TRN
004-0-01-09 M2616 TRN
004-0-01-10 M3904 TRN
008-0-01-00 M3905 TRN
008-0-01-01 M3904 TRN
012-0-01-00 2500 TRN
016-0-01-00 M2008 CHG
016-0-01-00 M2008 CUR
016-0-01-01 M2216-1 NEW
016-0-01-02 M2317 OUT
016-0-01-03 M2616 RPL
016-0-01-03 M2616 CUR
016-0-01-04 M2616 RPL
016-0-01-04 M2616 CUR

OTM Directory Integration

OTM Directory launched from the Set display in Station Administration, enables you to assign the set to a Directory Entity (that is, employees and Roles/Project).

Synchronization between the Station and Directory database enables the two databases to update the other.

When an employee or a role/project is assigned to a set, the Name and Department fields are copied from OTM Directory to Station Administration. Simultaneously, the Extension Number and Terminal Number of the set are copied from Station to OTM Directory. The Display Name field in OTM Directory is given the name of the first CPND DN on the set.

If no display name exists for the Directory Entity, the check box is grayed out.

For additional information on OTM Directory Services, refer to "OTM Directory Services" on page 159.

LDAP synchronization

The Station Administration Display Name database is kept in sync with changes in the corresponding Corporate LDAP Server. OTM Directory also synchronizes directly with the LDAP Server.

The LDAP synchronization process runs in the background of the OTM server at a scheduled time. It synchronizes employee data between the OTM Directory and the optional LDAP server. The updates may occur in either direction depending on the mapping defined by the administrator.

For more information on LDAP synchronization, see "LDAP synchronization" on page 310.

With regards to a person's first and last names, OTM should receive the formal first name and last name of an individual from the organization's LDAP server.

If there is no LDAP server in an organization, OTM performs the function of being the master repository for employee name data. The first and last name stored in the Employee Editor are the official first and last name for the individual (for example, "Timothy Smith"). The CPND application determines how the individual's name appears on a telephone display (for example, "Tim Smith").

The Corporate Directory feature for the M3900 series and IP Phones uses the first and last names in the Employee Editor, not the name that appears in CPND.

When name changes are made directly on the PBX and then synchronized with OTM, the name that is stored on the PBX is loaded into the CPND database. The Link to Directory check box is cleared since the information is not able to flow backwards into the OTM application. The OTM Directory is still the source for the official name, whether this is driven by synchronization with an LDAP server or through direct entry into the Employee Editor.

External parties

Linking to the OTM Directory

Prior to the introduction of the OTM Directory Service, each telephone can be assigned a first name, last name, and department in Station Administration. When defining the DN key on the telephone, the CPND name can be linked to the display name of the employee associated with the telephone.

Station Administration links to the following fields in OTM Directory:

- Name attributes: Last Name, First Name for employees, and Name attribute for Roles and Projects

  Note: Do not input spaces in the names of Roles/Projects.

- Organization Path, which interacts with the Department attribute in Station
- Extension Number
- Terminal Number

Linking through the Station Dialog window

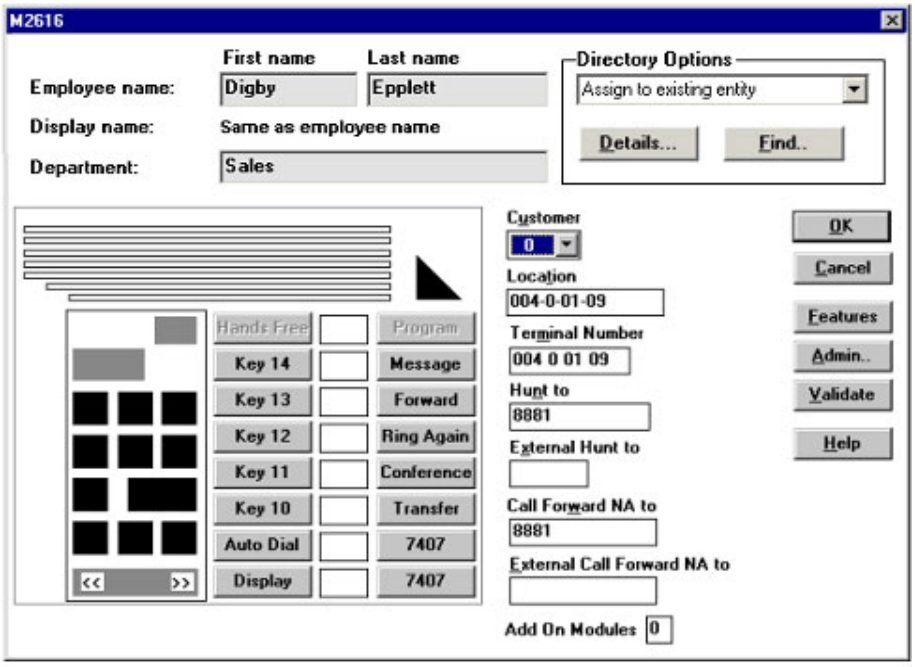
The employee name and department are linked to the OTM Directory through the Station Data dialog window to the Employee Editor within the OTM Directory.

The Department field in Station Administration derives from the last node in the ORG path in OTM Directory. This may not correspond exactly to the OTM Directory Department setting. For example, if Department is configured as the second-last node in the Directory ORG path, Station Administration assigns whatever is the last node in the ORG path as Department, and so the two fields do not correspond.

To link to the OTM Directory:

Select directory options through the Directory Options dialog box (Figure 58) in the Station Data box. See "Directory Options" on page 371.

Figure 58
Station Data dialog box



Only the First Name and Last Name in the OTM Directory are synchronized with the system. The name and department information is used by the OTM Corporate Directory application. To ensure that the Directory and Station databases are synchronized, select Partial Audit from the File menu.

Linking through the CPND window:

When the Link To Directory check box is selected, the CPND name that appears in the CPND application is the same as the Display Name attribute in the Additional Info tab of the Employee Editor. The CPND name is the name that will appear on telephone displays for calls made from the associated DN.

The system stores employee first and last names for use with Call Party Name Display (CPND). When an employee name linked to a DN changes, the Station data updates and is flagged as “changed.” This information is updated in the system during the next synchronization.

The CPND dialog box contains a Link to Directory check box that places First and Last name information from the OTM Directory into the CPND Name for this DN.

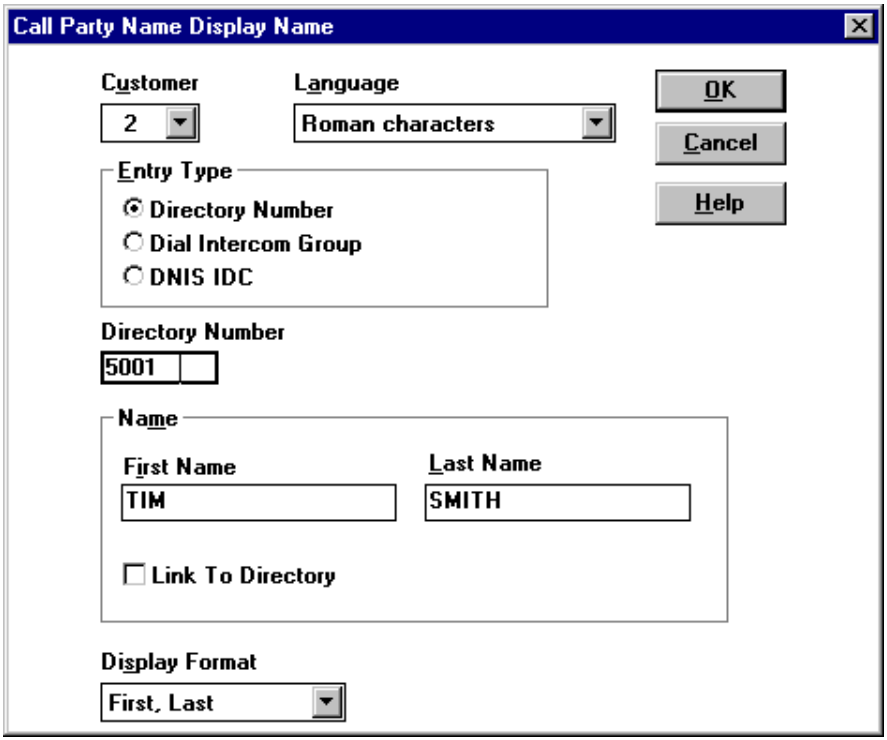
If this box is selected, the First Name and Last Name edit boxes are locked, and the name that appears on telephone displays matches the name that is stored in the OTM Directory.

To link to the OTM Directory: Select **Link to Directory** check box (Figure 59).

If this check box is not selected, you may edit the first and last names.

To change the CPND display name: Clear **Link to Directory** check box and enter the new name. (Figure 59).

Figure 59
Call Party Name Display Name dialog box



Excess DN report

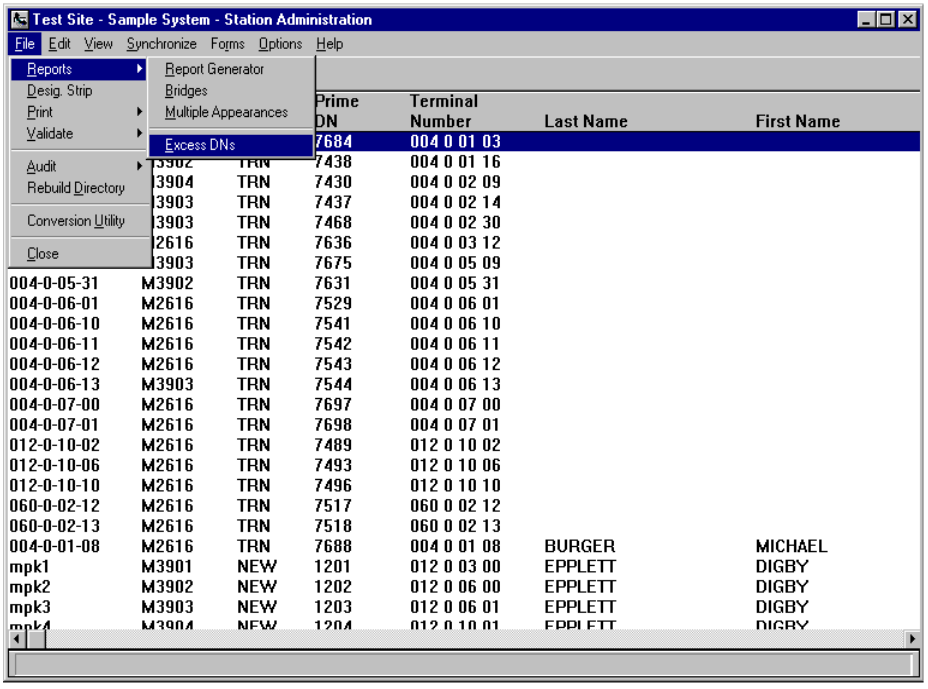
An employee listing in the Directory lists all the extensions associated with the employee. Normally, each of these extensions would match with a DN in Station Administration. However, when a set (and with it the DN) is deleted from Station Administration, the corresponding entry in the Directory is not removed. The old

extensions remain in the Directory to provide information to your billing department. Thus, there is a possibility that some of the extensions in the Directory do not match with any DNs in Station Administration. These extensions are termed Excess DNs.

Station Administration has a facility to print off a report that lists these excess DNs against their owner employee.

To run this report, select **File > Reports > Excess DNs** in the Station Administration window (Figure 60).

Figure 60
Excess DNs menu



Synchronization

The synchronization methods used by Station Administration to stay in sync with OTM directory:

- Polling
- Messaging

Polling

There are two polling methods available in the File, Audit menu option in the main Station window: Partial and Full.

Partial Audit polls the Directory for all the changed Employee records and update the Station Database. Thus, a Partial Sync deals with all Directory changes.

A Full Audit polls the Directory for all changed Employee records, update the Station database, and also brings the Station database into complete sync with OTM Directory.

If there are any discrepancies in the Station database (for example, a failure to update the database by OMMessageSync resulting in Directory changes not being flagged), a Full Audit resolves them. Full Audit cross-checks every Station record against Directory entries, and may be time-consuming.

Polling does not deal with changes relating to the deletion of Employees. This function is handled by OMMessageSync.

Synchronization also takes place whenever a set associated with an Employee or with Roles/Projects is opened for editing purposes. Once the editing begins, all fields are automatically synchronized.

Messaging

When a change occurs in OTM Directory, Directory automatically sends a Windows message to OMMessageSync, a 32-bit application that is launched immediately once you begin OTM Navigator. OMMessageSync then processes this message and updates the Station database.

OMMessageSync continues to run in the background, so that the Station and CPND views are updated constantly with Directory changes by OMMessageSync.

Directory changes are synchronized with the Station database even if Station Administration is not running, as OMMessageSync operating concurrently with OTM Navigator.

Changes made using the Station Administration interface reflect directly in the OTM Directory. This means that once the Station modification is confirmed, the OTM Directory is immediately updated.

Retrieval of Station Data

When synchronizing databases, the Directory database must be updated as a separate process. This happens immediately after the name parsing process.

For a Station set to be added to the OTM directory, it must have at least one CPND Display Name. For more information, "CPND overview" on page 392.

In Station Administration, the Display Name is the first CPND assigned to that set. The Display Names associated with the various keys on the set are added to the list of extensions of the Directory Entity.

Rebuilding the Directory

The OTM Directory can be rebuilt from the data present in the Station Administration database. The File, Rebuild Directory option has been provided to overcome the situation where the Directory database has, for whatever reason, become corrupt. The process involves a "walk-through" of every Station record and may be time-consuming for large Station databases.

Corporate Directory

OTM's Corporate Directory is a flexible tool for defining and generating reports of station data associated with a terminal number. Report data is provided by Station Administration. Data can include about 100 different data fields, including the name, extension, location, and department associated with each terminal number.

Corporate Directory requires that you have Station Administration and Microsoft Excel. See "Appendix A" in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) for more information on co-residency.

Defining and generating reports

To access the Corporate Directory tool, select **Utilities > Corporate Directory** in the Navigator window. The Corporate Directory window appears.

The Corporate Directory window is where you can view and manage reports. You can use predefined reports or define new reports.

To define a report, select **Configuration > Add Report**.

The New Report property sheet, where you can define data fields, column names, column order, and directory location for the report, appears.

To generate a report, select **File > Generate Report**. Choose one of the following:

- Select **Now** to immediately display the report in a Microsoft Excel window, print the report, or save it to a file.
- Select **Schedule** to have the report automatically generated to a printer or Excel file at a later time.

To highlight a report, select **File > Generate > Open** to display the most recently generated version of that report.

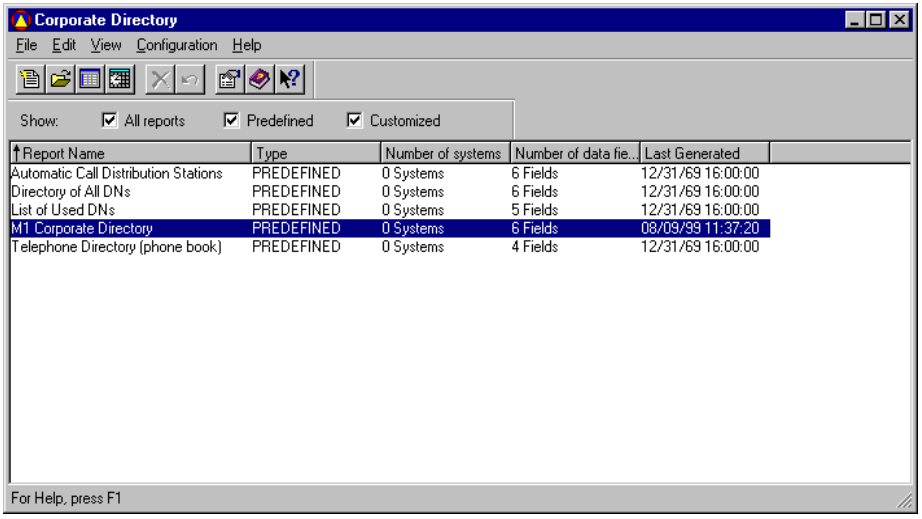
Before you can generate reports, Station Administration data must be downloaded from the switch and you must have at least one customer configured for each system.

See "Generating reports" on page 495 for more information.

Corporate Directory window

The Corporate Directory main window presents a graphical way to work with station information. Use this window's commands from the drop-down menus or the Toolbar to view, manage, and generate your reports. You see a list of predefined report formats the first time the main Corporate Directory window is launched (Figure 61).

Figure 61
Corporate Directory window


Corporate Directory
File Edit View Configuration Help
Show: All reports Predefined Customized
Report Name | Type | Number of systems | Number of data fie... | Last Generated
Automatic Call Distribution Stations | PREDEFINED | 0 Systems | 6 Fields | 12/31/69 16:00:00
Directory of All DNs | PREDEFINED | 0 Systems | 6 Fields | 12/31/69 16:00:00
List of Used DNs | PREDEFINED | 0 Systems | 5 Fields | 12/31/69 16:00:00
M1 Corporate Directory | PREDEFINED | 0 Systems | 6 Fields | 08/09/99 11:37:20
Telephone Directory (phone book) | PREDEFINED | 0 Systems | 4 Fields | 12/31/69 16:00:00
For Help, press F1

Each report format has the following attributes, as noted by the column headers:

- Report Name - Names of available reports
- Type - Notes if the report is either predefined or customized
- Number of systems - Number of systems for which the report will be generated
- Number of Data Fields - Number of data fields in the report
- Last Generated - Date and time when the report was last generated

Double-click a report name to display that report's property sheet. See "Report properties" on page 192.

Working with the Corporate Directory window

Use this window's commands from the drop-down menus or the toolbar to view, manage, and generate your reports.

Menu selections

Commands in Corporate Directory are available from the drop- down lists. Table 8 through Table 12 describe the available commands.

Table 8
File menu selections

Selection	Description
Generate Report/ Now	Shows a dialog box where the user selects a display method for the report. The user may display a report in a spreadsheet, print it to a default printer, or save it to a text file. If MS Excel is not installed, the report will open in Word Pad.
Generate Report/ Schedule	Shows a dialog box where the user selects a report destination and a specific date and time and other scheduling properties for the report. If MS Excel is not installed, the report will open in Word Pad.
Generate Report/ Open	Opens a previously generated and saved report for the selected item and displays it in a spreadsheet format. If no such report is available, a message box appears asking the user to verify the path and file name of the export file or regenerate the report. If MS Excel is not installed, the report will open in Word Pad.
Properties...	Opens the property sheet for the selected report and allows the user to configure the report.
Close	Saves the window's current settings and exits the application.

Table 9
Edit menu selections

Selection	Description
Undelete Report	Recovers the last deleted user-customized report.
Delete Report	Removes the selected user-customized report. Predefined reports cannot be deleted.

Table 10
View menu selections

Selection	Description
Toolbar	Displays or hides the tool bar. The menu shows a check mark next to the item when the toolbar appears.
Status Bar	Displays or hides the status bar. The menu shows a check mark next to the item when the status bar appears.
Filter Toolbar	Displays or hides the filter bar. The menu shows a check mark next to the item when the filter bar appears.

Table 11
Configuration menu selections

Selection	Description
Add Report...	Displays a new report property sheet. Use this to create a customized report.
Column Name...	Displays a dialog box where the user defines column names for data fields.

Table 12
Help menu selections

Selection	Description
Help Topics	Displays the index of Help topics.
What's This	Provides context-sensitive Help on the next item you select. Click anywhere else to go to the first topic in the Help topic list.
About Corporate Directory...	Displays information about the application.

Toolbar

The Toolbar provides another way of executing menu commands. Common tasks are available from the Toolbar (Figure 62).

Figure 62
Corporate Directory toolbar

Table 13 describes the function of each button.

Table 13
Toolbar buttons (Part 1 of 2)

Button	Description
	Add Report; Adds a report.
	Open Report: Opens a report.
	Generate Report Now: Generates a report.
	Schedule Report; Schedules a report.

Table 13
Toolbar buttons (Part 2 of 2)

Button	Description
	Delete Report: Deletes a report.
	Undelete Report: Restores a deleted report.
	Properties: Displays information about the application
	Help Topics: Displays the index of Help topics
	Context Help: Provides context-sensitive help on the next item you select. Click anywhere else to go to the first topic in the Help topic list.

Filter bar

Use the filter bar to show reports in the Corporate Directory window, based on their type. The default setting displays all reports (Figure 63).

Figure 63
Filter toolbar

The available settings are:

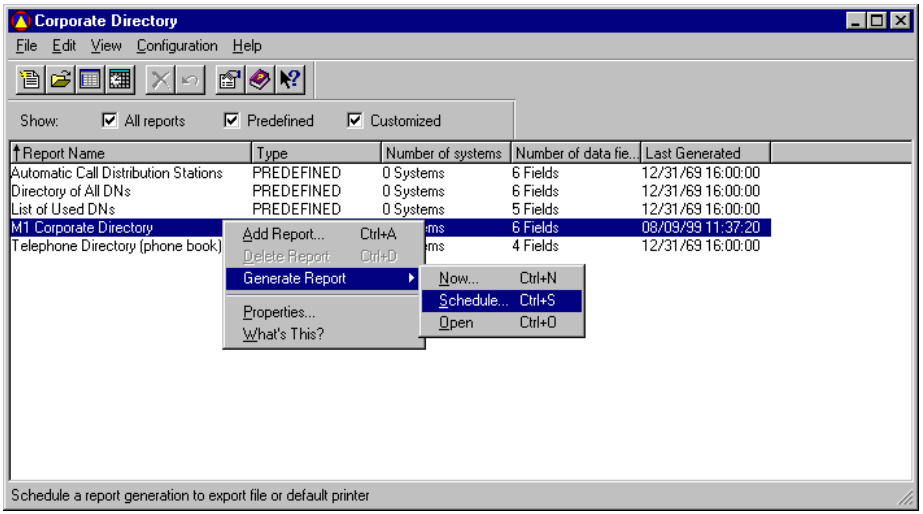
- All Reports: Displays all reports, predefined and customized
- Predefined: Displays only the predefined reports
- Customized: Displays only the customized reports

Pop-up windows

Pop-up windows show the available commands for a selection. Pop-up windows are activated by clicking the right-mouse-button while the cursor is in the report list portion

of the Corporate Directory window. Unavailable commands are dimmed. Menu items from the pop-up windows behave identically to the menu items in the pull-down menus (Figure 64).

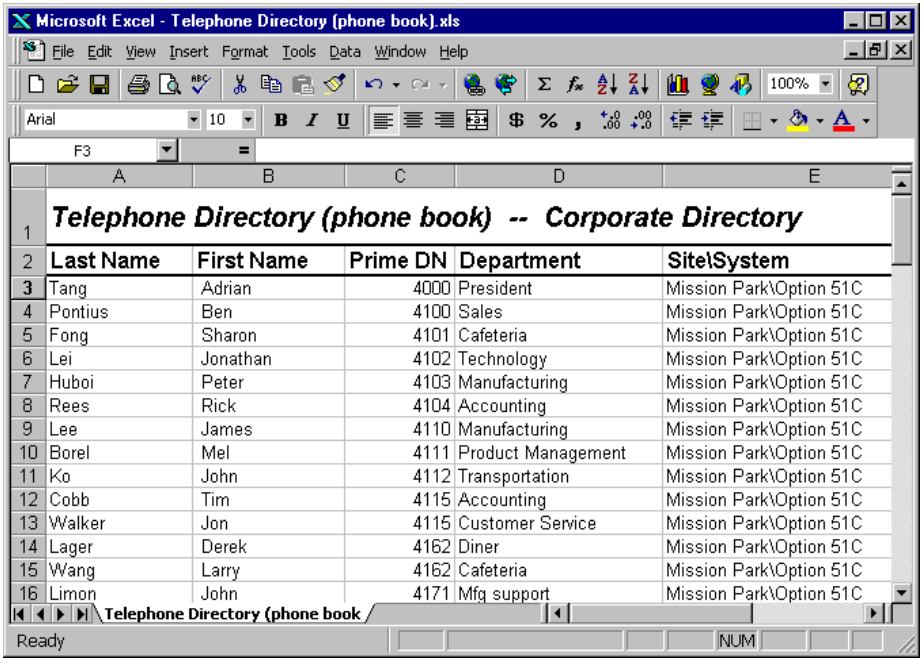
Figure 64
Pop-up window


Corporate Directory
File Edit View Configuration Help
Show: All reports Predefined Customized
Report Name
Type
Number of systems
Number of data fie...
Last Generated
Automatic Call Distribution Stations PREDEFINED 0 Systems 6 Fields 12/31/69 16:00:00
Directory of All DNs PREDEFINED 0 Systems 6 Fields 12/31/69 16:00:00
List of Used DNs PREDEFINED 0 Systems 5 Fields 12/31/69 16:00:00
M1 Corporate Directory 6 Fields 08/09/99 11:37:20
Telephone Directory (phone book) 4 Fields 12/31/69 16:00:00
Add Report... Ctrl+A
Delete Report Ctrl+D
Generate Report
Properties...
What's This?
Now... Ctrl+N
Schedule... Ctrl+S
Open Ctrl+O
Schedule a report generation to export file or default printer

Generating reports

The Corporate Directory feature lets you view, manage, and generate reports using available station information from systems configured with at least one user. Reports can be viewed on screen, printed, or saved to a file. Report layout and formatting is done through Microsoft Excel and Word Pad. See Figure 65 for an example of a typical report format.

Figure 65
Typical report format



Microsoft Excel - Telephone Directory (phone book).xls

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U 100%

F3 =

	A	B	C	D	E
1	*Telephone Directory (phone book) -- Corporate Directory*				
2	**Last Name**	**First Name**	**Prime DN**	**Department**	**Site\System**
3	Tang	Adrian	4000	President	Mission Park\Option 51C
4	Pontius	Ben	4100	Sales	Mission Park\Option 51C
5	Fong	Sharon	4101	Cafeteria	Mission Park\Option 51C
6	Lei	Jonathan	4102	Technology	Mission Park\Option 51C
7	Huboi	Peter	4103	Manufacturing	Mission Park\Option 51C
8	Rees	Rick	4104	Accounting	Mission Park\Option 51C
9	Lee	James	4110	Manufacturing	Mission Park\Option 51C
10	Borel	Mel	4111	Product Management	Mission Park\Option 51C
11	Ko	John	4112	Transportation	Mission Park\Option 51C
12	Cobb	Tim	4115	Accounting	Mission Park\Option 51C
13	Walker	Jon	4115	Customer Service	Mission Park\Option 51C
14	Lager	Derek	4162	Diner	Mission Park\Option 51C
15	Wang	Larry	4162	Cafeteria	Mission Park\Option 51C
16	Limon	John	4171	Mfg support	Mission Park\Option 51C

Telephone Directory (phone book

Ready NUM

You can either generate a report immediately or with a defined schedule with specific dates, times, and intervals. Generated reports use the data extracted from the OTM database. These reports are automatically saved with a system default name to the default location unless you specify another name or location. A total of ten reports can be automatically saved in this manner. Subsequent saved reports overwrite the earliest ones saved as the system recycles through its default names.

Generate reports now

To generate a report immediately, select the report name from the window and click the **Generate Report Now** tool bar button. This displays the Generate Report dialog box. Select one of the three destination options. Click **OK** to start the report generation process or **Cancel** to abort the process (Figure 66). Table 14 lists the controls in the Generate Report Now dialog box.

Figure 66
Generate Report Now dialog box

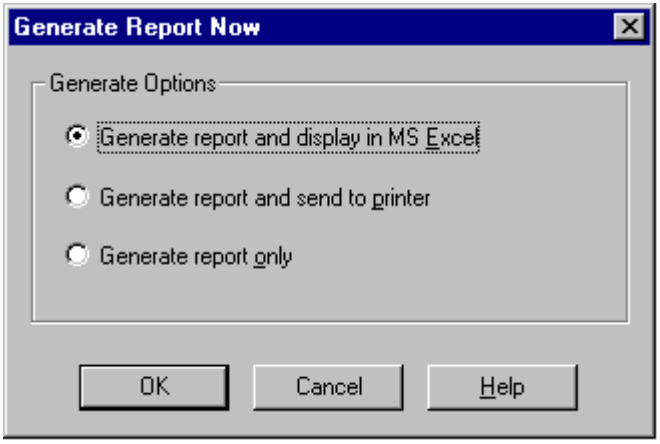


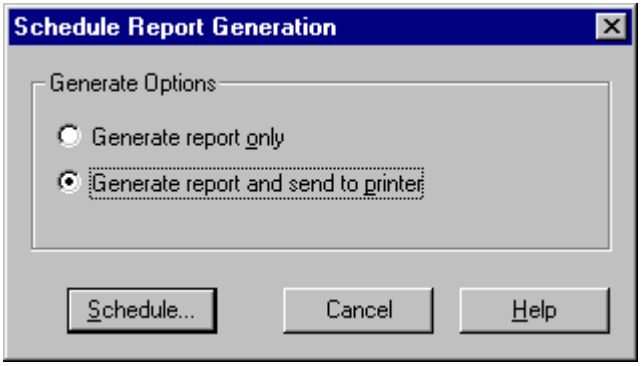
Table 14
Generate Report Now dialog box controls

Control	Description
Generate report and display in MS Excel	Generates a new report and displays it in MS Excel **Note:** You must have MS Excel installed and configured to use this option.
Generate report and send to printer	Generates a new report and sends it to a specified printer
Generate report only	Generates a report and saves it to disk
OK	Starts the report generation process and closes the window
Cancel	Exits the dialog box without generating a report
Help	Displays the online Help topic associated with this dialog box

Generate reports by schedule

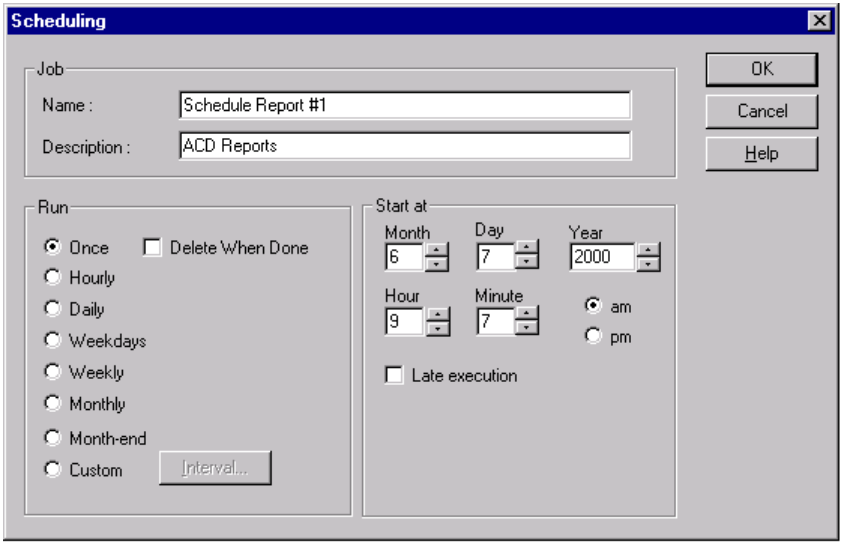
Select the report name from the window and click on the **Schedule Report** tool bar button. This displays the Schedule Report Generation dialog box. Use this dialog box to select one of two destination options (Figure 67).

Figure 67
Schedule Report Generation dialog box



Click **Schedule** in this window to open the Scheduling window (Figure 68). Use the Scheduling window to specify when and how often to generate the report.

Figure 68
Scheduling window



Report properties

Each report shows a specific set of station data. Corporate Directory provides a set of reports whose properties are already defined. See “Predefined reports” on page 200. You can create customized reports for your specific needs. See “Customized reports” on page 201.

View report properties by double-clicking or clicking the right mouse-button and selecting Properties on an available report in the Corporate Directory window. This opens a property sheet with three tabs titled General, Data Fields, and Output. The property sheet contains information specific to the selected report.

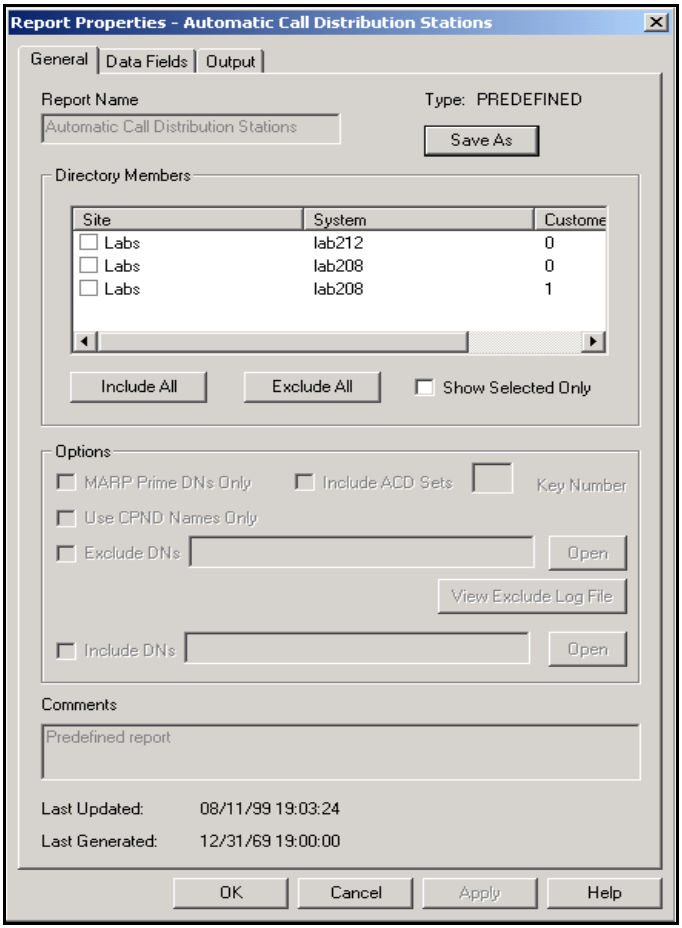
There are four buttons common to each property sheet:

- **OK** - Saves any changes and exits the property sheet
- **Cancel** - Exits the property sheet without saving any changes
- **Apply** -Saves the changes without exiting the property sheet
- **Help** - Displays Help topics for the property sheet

General tab

Use the General tab to view or define a report name. Additionally, use the General tab to specify multiple sites and systems for which the report will be generated. All available sites and systems are listed. Select the check box next to an entry to include it in the report. Clear the check box to exclude it from the report. Reports are generated with data from all included sites and systems (Figure 69).

Figure 69
General Tab in the Report Properties sheet



Controls in the General tab include:

- Report Name - Displays the report name. New report names are entered here. Users are limited to report names of up to 100 characters.
- Save As - Saves the current report as a new customized report. The “Type” notation automatically changes from Predefined to Customized as needed.

  The new report name must be unique. Otherwise, the Save As command fails.

- Directory Members
  - — Sites/System/Customer - Displays available sites and system names. Check boxes indicate if the site or system is included in the report.
  - — Include All - Selects all sites and systems; all boxes are selected.
  - — Exclude All - Deselects all sites and systems; all boxes are cleared.
  - — Show Selected Only check box - Toggles the list to display selected items only or all items.
- Options
  - — MARP Prime DNs Only check box - When selected, only Prime DNs with MARP set to Yes are retrieved. Otherwise all Prime DNs (Key 0 DNs) are retrieved. The default setting is selected.
  - — Include ACD Sets check box - When selected, the Key Number edit box becomes enabled and the user can enter the key number from which to retrieve the Prime DN. When cleared, ACD sets are excluded from the report.
  - — Key Number edit box - The DN is retrieved from the given key number for all selected systems on the OTM server generating the corporate directory list. When the edit box is left blank, the first MARP DN key found is retrieved.
  - — Use CPND Names Only check box - When selected, the name for an entry is retrieved from the CPND database instead of the Station database. The customer is given the option of using names defined in the CPND application or the names defined in the Station application. The default setting is cleared.

    When selecting this option, the user must ensure the CPND database is up-to-date and the desired DNs in the report have a corresponding CPND entry.
  - — Exclude DNs check box - When selected, all entries that match the search criteria are removed. The default setting is cleared.
  - — Text box - The filename entered in the text box contains the search criteria used to exclude entries from the directory report.
  - — Open control button - Opens the file specified in the edit text box. The application pre-formats the file to appear in a more user friendly Excel format for editing. The file is saved and stored in CSV format. If MS Excel is not installed, the file will open in Word Pad.
  - — View Exclude Log File control button - Opens the file which stores the entries that have been removed from the report based on the criteria specified in the Exclude DNs file. Each time a report is generated, all existing entries in the file are deleted before the new entries are added. If MS Excel is not installed, the file will open in Word Pad.

— Include DNs check box - When selected, entries are appended to the Corporate Directory report. The default setting is cleared.

— Text box - The text box displays the file that stores all the entries to be included. The default value is <otmroot>\CorpDirInclude.csv.

— Open control button - Opens the file specified in the edit text box. The application pre-formats the file to appear in a more user friendly Excel format for editing. The file is saved and stored in CSV format. If MS Excel is not installed, the file will open in Word Pad. The user adds the entries that must be appended to the report. The required format is: Last Name, First Name, PrimeDN, LDN, CNUM, Department, Site/System.

Note: If Microsoft Excel is not installed on the PC, then the CSV files cannot be opened in Excel format.

- Comments - Accepts user comments up to 256 characters for customized reports only.
- Last Updated - Displays when the last change was made to the report.
- Last Generated - Displays when the report was last generated. This field is empty if the report has never been generated.

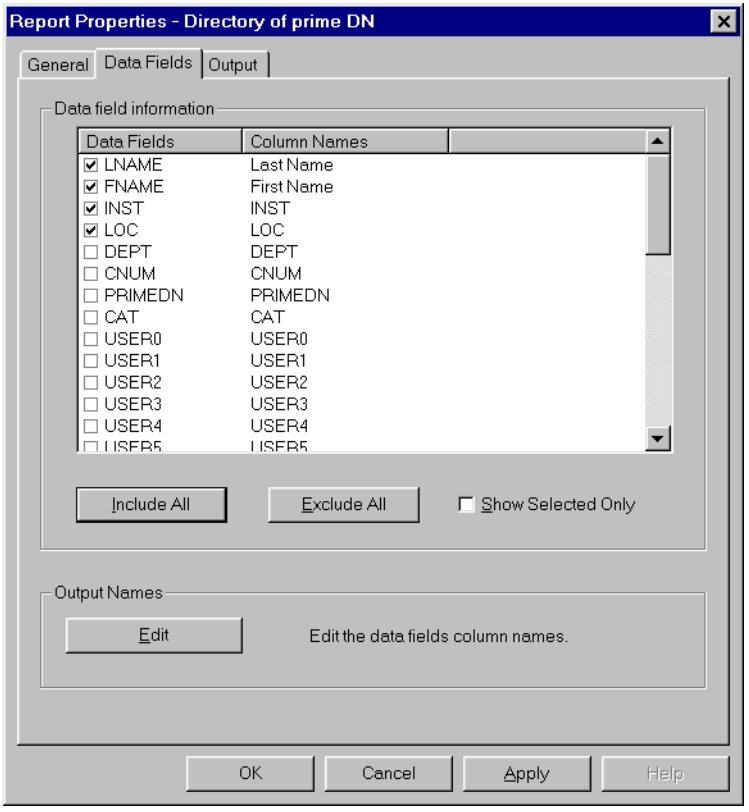
Note: To preserve leading zeroes, generate reports using the Word Pad editor.

Data Fields tab

Use the Data Fields tab to configure the report's data fields and column names. Supported station data fields appear. See "Supported data fields" on page 202.

Select the check box to include that particular field in the report. For each data field, you can specify a column name; otherwise the report uses the default mnemonic (Figure 70).

Figure 70
Data Fields tab in the Report Properties sheet



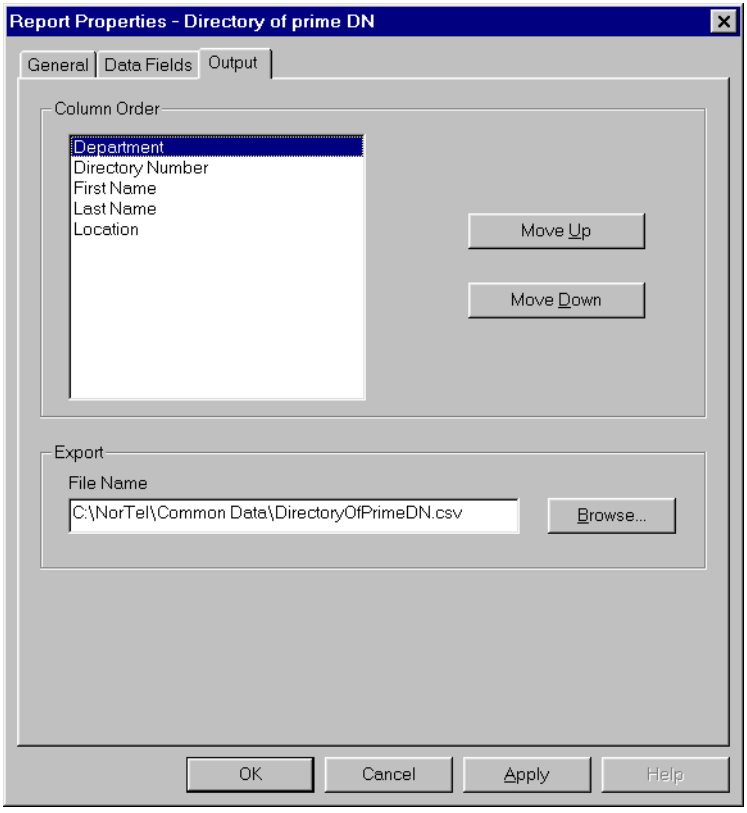
Controls in the Data Fields tab include:

- Data Fields - Lists all the available station data fields at the corporate level. Use the check box to select or clear a data field.
- Include All - Selects all data fields; all boxes are selected.
- Exclude All - Deselects all data fields; all boxes are cleared.
- Show Selected Only - Toggles the list to display selected items only or all items.
- Edit - Displays a dialog box to edit the column names for the data fields.

Output tab

Use the Output tab to define the report's output format and export destination for the results (Figure 71).

Figure 71
Output tab in the Report Properties sheet



The Output page displays the order the columns appear in the report (left to right). Additionally, it displays the file and path name to be used when the report is generated and saved to a file. Type the path and filename or use Browse to navigate the directory structure to find the desired file.

Controls in the Output tab include:

- Move Up - Moves the selected column name up the list by one position
- Move Down - Moves the selected column name down the list by one position
- File Name - Allows the user to enter the path and file name for the export file
- Browse - Allows the user to navigate the directory structure to search for a path and file name

Upload tab for M1

The Upload tab is used in conjunction with the Corporate Directory feature for M3900 Series and IP Phones. This tab appears only in the property sheet for the M1 Corporate Directory predefined report (Figure 72).

Use the Upload tab to configure the target system, upload members, dialing prefix, and upload schedule. The Upload Members frame contains a list of available systems.

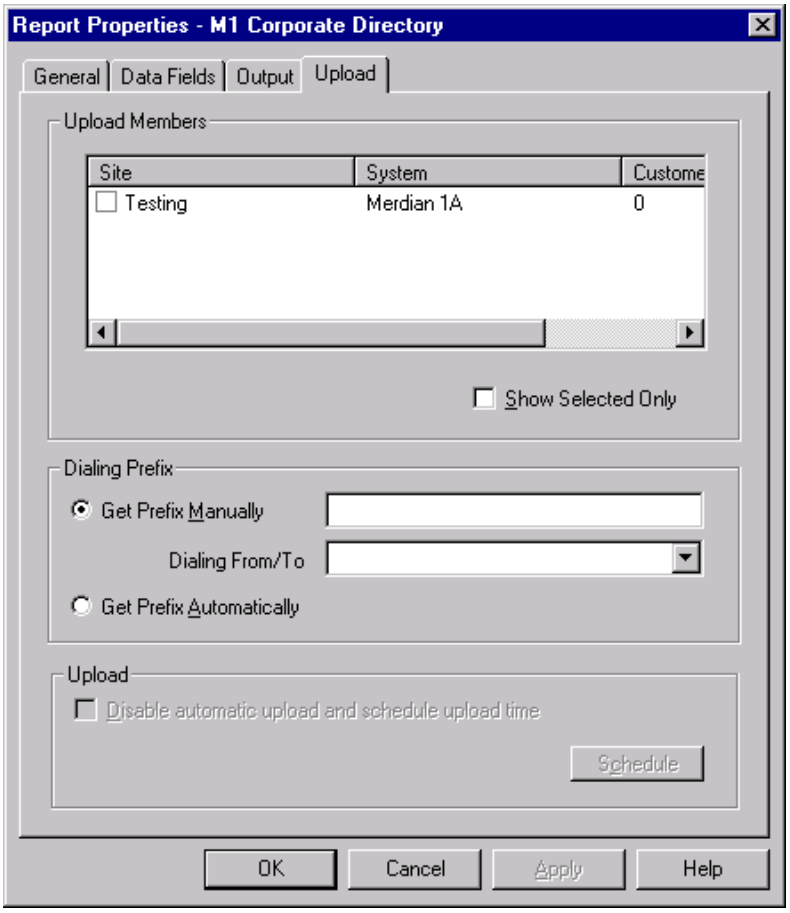
Use the check boxes to select the systems that are to receive the corporate directory data. Once a system is selected, a Target Selection dialog box appears. This box contains a list of the available target systems. Use the check boxes to select the systems from which you want to collect the corporate directory data, and then click **OK**.

The Dialing Prefix frame allows you to set any access codes required for dialing between systems. Choose whether to obtain the dialing prefix directly from the system or to set the prefix manually.

If you select the Get Prefix Manually option, you must then use the Dialing From/To drop-down list to select your systems and enter the dialing prefix. If no dialing prefix is required, you can leave this field empty. If you select Get Prefix Automatically, the dialing prefix is retrieved from Customer Properties in OTM.

The Upload frame allows you to schedule the upload of corporate directory data. If the Disable automatic upload and schedule upload time check box is cleared, the corporate directory data is uploaded automatically after the corporate directory report is generated. If this check box is selected, the Schedule button is enabled, and you can schedule the upload independent of the report generation.

Figure 72
Upload tab in the Report Properties sheet



Predefined reports

In addition to the M1 Corporate Directory predefined report, see "Corporate Directory feature for M3900 Series and IP Phones" on page 206. Corporate Directory includes five commonly generated reports as predefined reports. These reports, along with their data fields and column names, are as follows:

- Automatic Call Distribution Stations report
  - ACS - Position IDT
  - CLS - Trunk/Call Type Access Restriction
  - SPID - Supervisor Position ID

- LOC - Location
- TN - Terminal Name
- LNAME - Last Name

- Telephone Directory report
  - LNAME - Last Name
  - FNAME -First Name
  - PRIMEDN - Directory Number
  - DEPT - Department
- Directory of Prime DNs report
  - PRIMEDN - Directory Number
  - INST - Instrument Type
  - TN - Terminal Number
  - LOC - Location
  - LNAME - Last Name
  - FNAME - First Name
- Listing of Used DNs report
  - PRIMEDN - Directory Number
  - LNAME - Last Name
  - FNAME -First Name
  - LOC - Location
  - TN - Terminal Number

Customized reports

Use Corporate Directory to create new report formats for your specific reporting needs. On the Report Properties dialog box, select the data fields for the sites and systems.

You can create a customized report by starting with an existing report format. Use the Report Properties dialog box to revise the existing report. Be sure to save the customized report with a new name.

Click **Add Report** to create a new report. This command displays a blank Report Properties dialog box with all options set to “off” by default. The Report Name field is

mandatory. The screen presents an error message if this field is left empty when you click **OK** or **Apply**.

Supported data fields

Table 15 lists the acronym and data fields supported by Corporate Directory:

Table 15
Supported data fields (Part 1 of 4)

Data field	Description
LNAME	Last Name
FNAME	First Name
INST	Instrument
LOC	Location
DEPT	Department
CNUM	Customer Number
PRIMEDN	Prime DN
CAT	Category
USER0	
USER1	
USER2	
USER3	
USER4	
USER5	
USER6	
USER7	
USER8	
USER9	
Comment	
EQUIPMENT	Equipment
SSTAT	Sync Status
AOM	Number of Add on Modules
ECOST	Equipment Cost
COSTID	Cost ID

Table 15
Supported data fields (Part 2 of 4)

Data field	Description
DIV	Division
DIGS	Dial Intercom Groups
ACDS	Key Assigned to Automatic Call Distribution (ACD)
ADN	All Directory Numbers
EHTK	External Hunt DN
EFDK	External Forward DN
AAA	Automatic Answer Back
AEFD	Alternate External Flexible Call Forward
AEHT	Alternate External Hunt DN
AGTA	ACD Agent Analog Telephone
AHNT	Alternate Hunt DN
ALDR	M3000 Directory Lock - Discontinued
AOS	observation of Supervisor
AUTU	Station Specific Authcodes
CCSA	Controlled Guest Telephone
CDEN	Card Density
CFHA	Call Forward/Hunt Override
CFTA	Call Forward by Call Type
CFXA	Call Forward External
CLS	Trunk/Call Type Access Restriction
CNDA	Call Party Name Display
CNIA	Call Number Information
CRCS	Flexible Code Restriction Class
CWA	Call Waiting - from Incoming Trunk
CWNA	ACD Call Waiting Notification Set
DDGA	Present/Restrict Calling Number
DDS	Digit Display
DELA	Dealer Allowed
DES	1–6 Character Designator

Table 15
Supported data fields (Part 3 of 4)

Data field	Description
DIG	Dial Intercom Group<space>Member
DN	Station Directory Number
DNDA	Dialed Number Name Display
DPUA	Directory Number Pickup
EFD	CFNA DN for External Calls with CFTA
EHT	Hunt DN for External Calls with CFTA
FBA	Call Forward Busy for DID Calls
FCAR	Force Charge Account
FDN	Flexible Call Forward No Ans DN
FNA	Call Forward No Answer
GPUA	Group Pickup
HBTA	Hunt by DID Call Type
HFA	Hands Free
HSPA	Hospital Room with DID Management
HTA	Hunting
HUNT	Hunt DN - All Calls, or Internal Calls Forward
IAMA	Intercept Computer Answering Machine
ICT	Intercept Computer Terminal/Printer
IPNA	Intercept Position
IRGA	Intercept Computer Interrogation Set
LANG	Language for Automatic Wake Up
LDN	Departmental LDN
LHK	Last Hunt Key for Short Hunt
LNA	Last Number Redial
LPA	Message Waiting Lamp
MCRA	Multiple Call Arrangement DN
MCTA	Malicious Call Trace
MLWU_LANG	Language for Automatic Wake Up
MRA	Message Registration

Table 15
Supported data fields (Part 4 of 4)

Data field	Description
MTA	Maintenance Set
MWA	Message Waiting at Message Service
NAMA	Present/Restrict Calling Name
NCOS	Network Class of Service
PDN	Calling Line ID from Prime DN
PRI	ACD Agent Priority Level
PUA	Call Pickup
RCC	Restricted from Receiving Collect Call
RNPG	Ringing Number Pick-up Group
RTDA	Call Redirection by Time of Day
SCPW	Station Control Password
SFA	Second Level CFNA
SFDN	Secretarial Forwarding DN
SFLT	Secretarial Filtering Boss/Secretary
SGRP	Scheduled Access Restriction Group
SPID	Supervisor Position ID
SPV	ACD Supervisor/Agent
SSU	System Speed Call List Number
TEN	Multi-Tenant Number
TENA	Tenant Service
TGAR	Trunk Group Access Restriction
TN	Terminal Number
TSA	Three Party Service
USMA	Meridian 911 Position
VISI	Visiting Portable
VMA	Virtual Message Agent
WRLS	Wireless
XLST	Pretranslation
XRA	Ring Again

Corporate Directory feature for M3900 Series and IP Phones

The Corporate Directory feature allows M3903, M3904, M3905 and IP telephone sets to display and access a corporate-wide directory. For this feature to function across a network of CS 1000 and Meridian 1 systems, each system must access corporate directory data from other systems on the network. For information on IP Phones, or to learn how to use the Corporate Directory feature on the M3903, M3904, and M3905 telephones, see *Telephones and Consoles: Description, Installation, and Operation* (553-3001-367).

OTM Corporate Directory supports combining station data from multiple systems, and uploading this data to a system. The Corporate Directory feature allows you to select from which systems the data will be collected, the "target" systems, and to which systems the data will be uploaded, the "upload members."

When a system is newly configured, the Corporate Directory database does not exist. You must use OTM to extract the Station Administration data from the OTM database to form a new database called the Corporate Directory database. Extract data from the following fields: name, phone number, listed directory number, customer number, and department number. The Corporate Directory database is then uploaded to the system where it becomes activated for use by that system's M3903, M3904, M3905, and IP telephone users. You should update the Corporate Directory database with the latest Station Administration data on a regular basis. Regular updates to the Corporate Directory database ensure that telephone user additions and deletions are captured. You can manually schedule the update for a predefined time, or to automatically occur after the OTM report is generated.

Requirements

Upload members (systems to which the corporate directory data will be uploaded), must be X11 Release 25 or higher for Meridian 1 systems. Upload members that are CS 1000 systems must be Release 2.0 or higher and must be equipped with IP Line 3.0.

Target system can be any CS 1000 and Meridian 1 system. Station data from target systems will come from the OTM Station Administration database for those systems. Be sure the station data is synchronized with the system by retrieving station data from within Station Administration.

Upload configuration

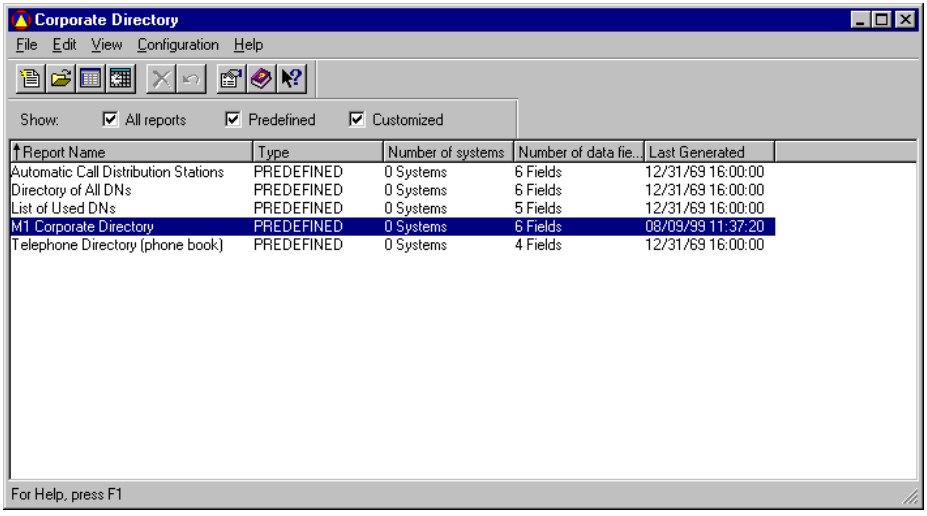
The Corporate Directory upload is configured using the predefined M1 Corporate Directory report in OTM Corporate Directory.

Procedure 29
Configuring the upload

1 From the OTM System window, select **Utilities > Corporate Directory**.

The Corporate Directory window opens (Figure 73).

Figure 73
Corporate Directory window


Corporate Directory
File Edit View Configuration Help
Show: All reports Predefined Customized
Report Name | Type | Number of systems | Number of data fie... | Last Generated
Automatic Call Distribution Stations | PREDEFINED | 0 Systems | 6 Fields | 12/31/69 16:00:00
Directory of All DNs | PREDEFINED | 0 Systems | 6 Fields | 12/31/69 16:00:00
List of Used DNs | PREDEFINED | 0 Systems | 5 Fields | 12/31/69 16:00:00
M1 Corporate Directory | PREDEFINED | 0 Systems | 6 Fields | 08/09/99 11:37:20
Telephone Directory (phone book) | PREDEFINED | 0 Systems | 4 Fields | 12/31/69 16:00:00
For Help, press F1

2 In the Corporate Directory window, select the M1 Corporate Directory predefined report.

You cannot add a new field, modify the existing fields, or delete any fields in this report.

It is very important that you select the M1 Corporate Directory Predefined report. This report is the only report that can be uploaded to systems for use with the Corporate Directory feature.

3 Use one of the following three methods to access the report properties window:

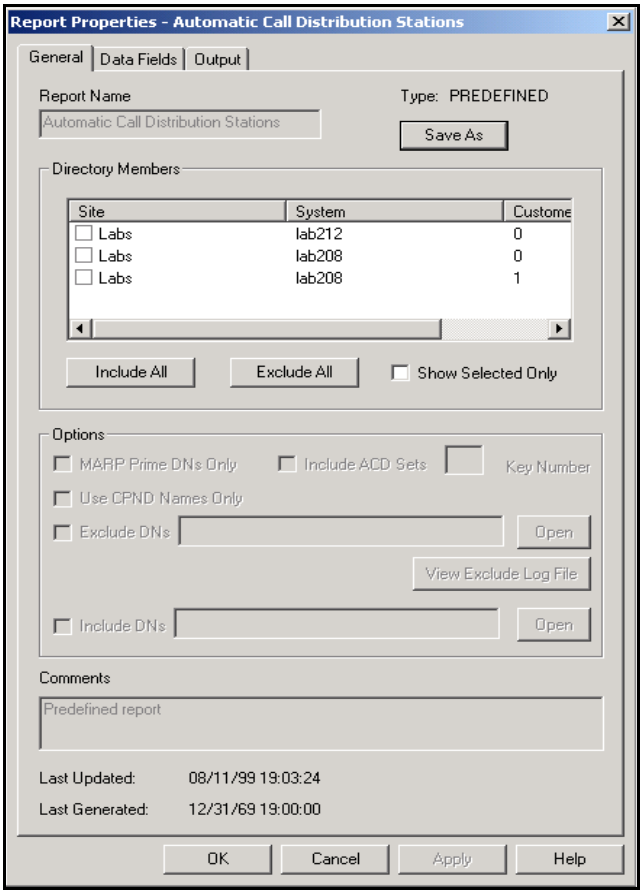
- Double-click on the highlighted line.
- Click **Properties** in the toolbar.
- Select **File > Properties**.

Any of these selections display the report properties.

4 Click the **General** tab.

The Directory Members list shows the systems that are available to configure (Figure 74).

Figure 74
General tab in the Report Properties sheet

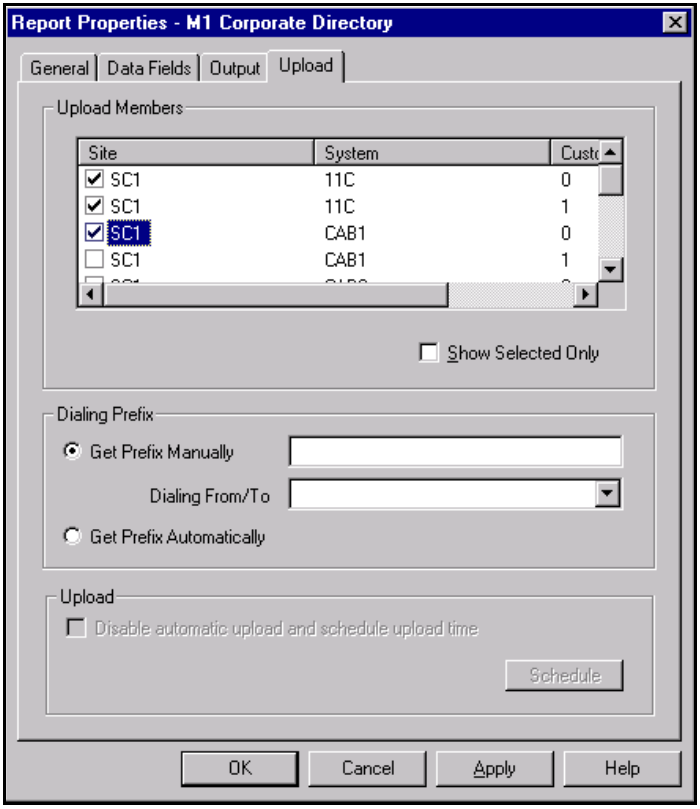


5 Select the boxes corresponding to the systems from which you will be collecting data.

The Data Fields and Output tabs are fixed, you cannot change the information in these tabs.

6 Click the **Upload** tab to configure the upload members, target systems, dialing prefix, and upload schedule (Figure 75).

Figure 75
Upload tab in the Report Properties sheet

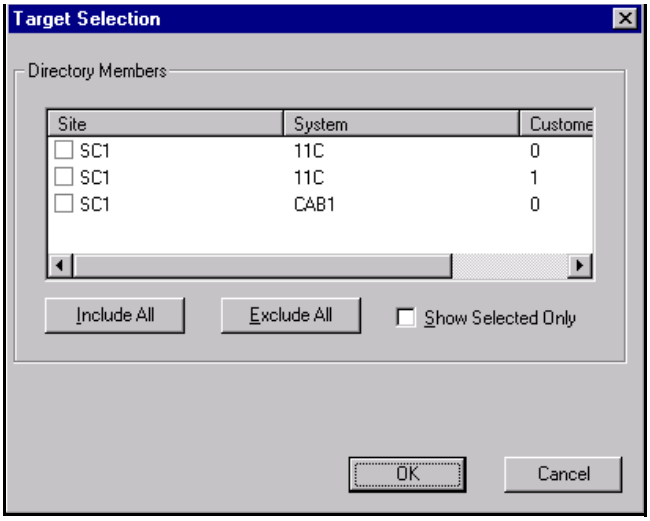


The Upload Members frame contains a list of available CS 1000 and Meridian 1 systems.

7 Select the boxes corresponding to the systems to which you want the corporate directory data uploaded.

Once a system is selected, a Target Selection dialog box appears with a list of available target systems (Figure 76).

Figure 76
Target Selection dialog box



8 In the Target Selection dialog box, select the systems from which you want to collect the corporate directory data.

9 Click **OK**.

The Dialing Prefix frame allows you to set any access codes required when dialing between systems.

10 Click the appropriate radio button to choose whether to get the dialing prefix automatically from the system, or to set the prefix manually.

- If you choose the Get Prefix Manually option, you must then use the Dialing From/To drop-down list to select your systems, and then type in the dialing prefix.

  If no dialing prefix is required, such as when you are using Coordinated Dialing Plan, where no extra digits are required to call between systems, you can leave this field empty.

- If you choose Get Prefix Automatically, the dialing prefix is retrieved from the system, but the upload may take longer than using the Get Prefix Manually option.

  The Upload frame allows you to schedule upload of corporate directory data.

11 Determine whether you want to automatically upload data or schedule the upload to occur at a specific time:

- If the Disable automatic upload and schedule upload time check box is cleared, the corporate directory data is uploaded automatically after the corporate directory report is generated.

  If automatic upload is not disabled, your request is sent to the scheduler queue after the report is generated. The scheduler executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

- If the Disable automatic upload and schedule upload time check box is selected, the Schedule button becomes enabled and you can schedule the upload to occur separately from the report generation.

Report Generation and Upload

To generate a corporate directory report and upload the data to the upload members, choose F**ile > Generate Report**.

You can choose to run the report now or schedule the report to run later. If you have automatic upload enabled, the upload occurs when report generation completes.

If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

Dialog boxes indicate the progress of report generation and upload as these tasks run. The amount of time it takes to upload the corporate directory data differs based on the number of stations you are uploading. Also, if you have chosen to get the dialing prefix automatically from the system, the upload takes longer than the manual method.

Once the upload is complete, open the file Uploader.log in the Local Data directory to check the upload status. The contents of this file indicate whether the upload was successful.

Event Log Viewer

This section contains a general overview of the Event Log Viewer. It describes its functions and purpose. For complete details on how to use the Event Log Viewer, refer to the online Help.

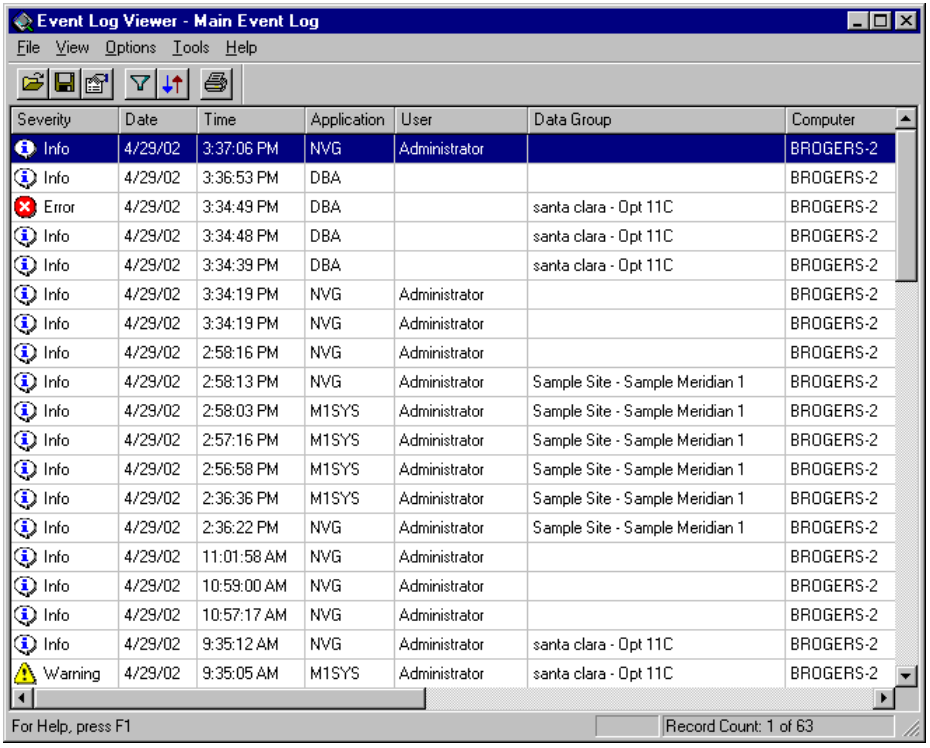
Overview

Use the Event Log Viewer to view the records of all operations that are run from OTM. The Event Log Viewer displays the event records stored in the Event Log. The Event Log Viewer also has features such as event sorting and filtering.

Interface

Select Event Log Viewer from the Maintenance menu of the OTM Navigator window. The main window of the Event Log Viewer displays the Event Log data in a report layout (Figure 77). Column headings display text describing the meaning of the data it contains. You can change the size of columns by dragging on the divisions that separate the headings.

Figure 77
Event Log Viewer window


Event Log Viewer - Main Event Log
File View Options Tools Help
Severity Date Time Application User Data Group Computer
Info 4/29/02 3:37:06 PM NVG Administrator BROGERS-2
Info 4/29/02 3:36:53 PM DBA BROGERS-2
Error 4/29/02 3:34:49 PM DBA santa clara - Opt 11C BROGERS-2
Info 4/29/02 3:34:48 PM DBA santa clara - Opt 11C BROGERS-2
Info 4/29/02 3:34:39 PM DBA santa clara - Opt 11C BROGERS-2
Info 4/29/02 3:34:19 PM NVG Administrator BROGERS-2
Info 4/29/02 3:34:19 PM NVG Administrator BROGERS-2
Info 4/29/02 2:58:16 PM NVG Administrator BROGERS-2
Info 4/29/02 2:58:13 PM NVG Administrator Sample Site - Sample Meridian 1 BROGERS-2
Info 4/29/02 2:58:03 PM M1SYS Administrator Sample Site - Sample Meridian 1 BROGERS-2
Info 4/29/02 2:57:16 PM M1SYS Administrator Sample Site - Sample Meridian 1 BROGERS-2
Info 4/29/02 2:56:58 PM M1SYS Administrator Sample Site - Sample Meridian 1 BROGERS-2
Info 4/29/02 2:36:36 PM M1SYS Administrator Sample Site - Sample Meridian 1 BROGERS-2
Info 4/29/02 2:36:22 PM NVG Administrator Sample Site - Sample Meridian 1 BROGERS-2
Info 4/29/02 11:01:58 AM NVG Administrator BROGERS-2
Info 4/29/02 10:59:00 AM NVG Administrator BROGERS-2
Info 4/29/02 10:57:17 AM NVG Administrator BROGERS-2
Info 4/29/02 9:35:12 AM NVG Administrator santa clara - Opt 11C BROGERS-2
Warning 4/29/02 9:35:05 AM M1SYS Administrator santa clara - Opt 11C BROGERS-2
For Help, press F1
Record Count: 1 of 63

File menu

The File menu contains commands to open and close Event Logs, print Event Log reports, and maintain the Main Event Log.

View menu

The View menu commands allow you to change the way you view an Event Log.

> ***Note:*** If data is outside of the display area, use the scrollbar to bring the desired data into view.

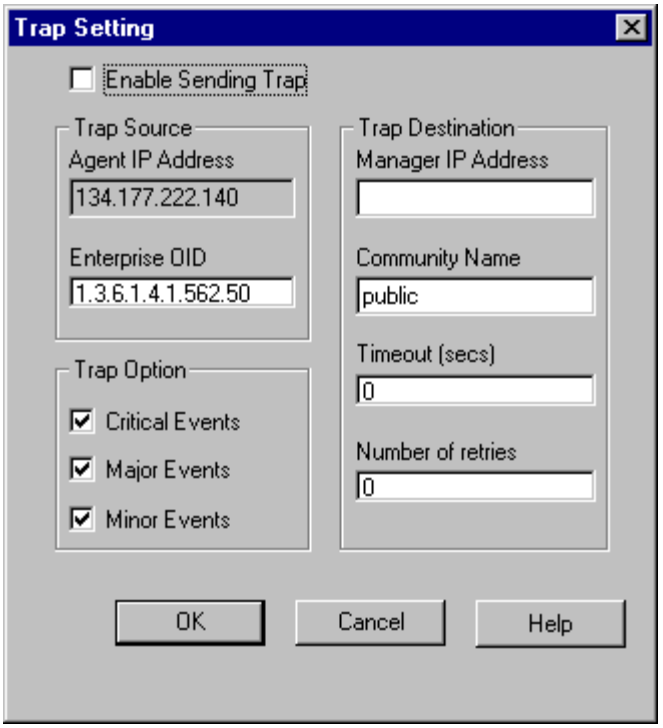
Options menu

The Options menu allows you to save the settings you entered in the File and View menus.

Tools menu

The Tools menu allows you to access the SNMP Trap Setting window (Figure 78).

Figure 78
SNMP Trap Setting window



The Trap Setting option enables SNMP Trap Setting and contains the following options:

Trap Source:

Agent IP Address: An agent is an SNMP entity located on the managed node. The Agent IP Address is the IP address of the agent entity (that is, the equipment sending the trap).

Enterprise OID: The Enterprise OID is a unique value assigned to your organization by the Internet Assigned Number Authority (IANA).

Trap Destination:

Manager IP Address: The Manager IP Address is the IP address of the PC that hosts the target SNMP Manager and receives the trap. The Manager IP address is typically the IP address of the OTM Server.

Community Name: This name identifies the community string. The default name is "Public."

Timeout: The Timeout value is a time interval in seconds and determines the length of time that applications wait for an SNMP agent entity to respond to a request.

Number of Retries: The number of times the system attempts to connect to the SNMP Manager.

Trap Option:

Critical Events: This error indicates that the event resulted in a loss of data or system functionality.

Error Events: This error indicates the termination of a process that can result in other processes being terminated (for example, a corrupt DLL).

Warning Events: This error indicates that the event was not necessarily significant but might point to possible future problems.

System Terminal

System Terminal helps you perform overlay-based tasks directly through the TTY interface. System Terminal provides online, context-sensitive Help for overlays, prompts, and error messages. System Terminal also provides a terminal emulation capability.

In the web environment, Terminal Client provides the same functionality as System Terminal. For information on Web Virtual System Terminal, see "Virtual System Terminal" on page 757.

There are two versions of System Terminal to support two different connection types—Ethernet or PPP and Serial—as follows:

- Overlay Passthru is available on X11 release 23 and later systems connected to OTM using Ethernet or PPP. Overlay Passthru only supports access to the overlays.

- VT220 provides similar functions for any system using serial connections, as well as terminal emulation for all application modules (such as Meridian Mail). VT220 is discussed in "VT220" on page 227.

In Release 21 systems, you access the overlays using the System Terminal (Ethernet or PPP required) and access the application modules via VT220. In Release 21 systems, you access both the overlays and application modules via VT220.

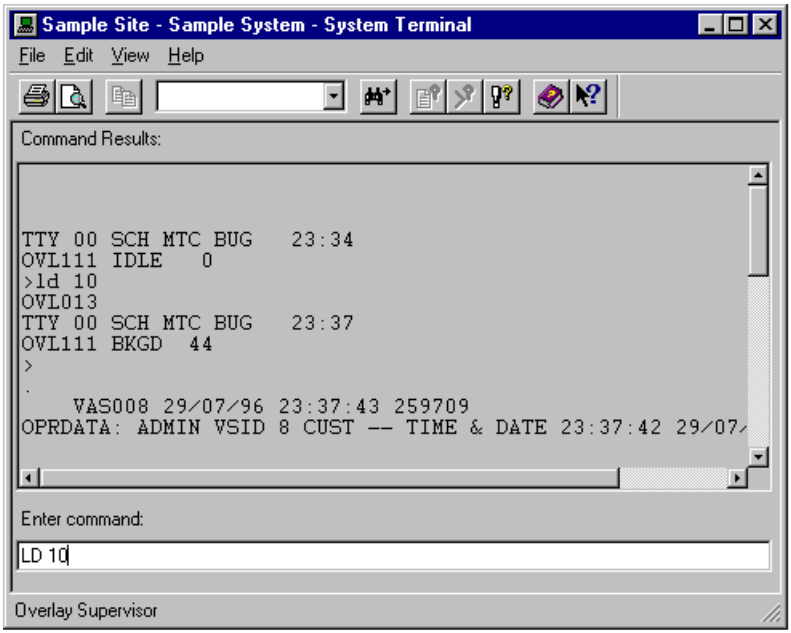
Launching System Terminal (Ethernet or PPP required)

Procedure 30
Launching System Terminal

1. Connect to the system of interest.
2. Select **System Terminal** from the Maintenance menu or toolbar in the System window
3. Enter your system login name and password in the System Login dialog box. Figure 79 shows the System Terminal window.

End of Procedure

Figure 79
System Terminal window



The System Terminal window displays all system events as they occur. It also gives you direct access to any overlay.

For Ethernet or PPP connections, each active System Terminal connection requires a pseudo-TTY (PTY) port. PTYs are software-only I/O ports. The System Terminal and Maintenance Windows applications use these ports to access the overlays.

Ethernet and PPP are available only for X11 Software Release 23 and above with packages 296 and 243 equipped.

Configuring a pseudo-TTY port

OTM applications require that you configure a pseudo-TTY (PTY) port on the system for access to the overlays. TTY ports differ from PTY ports in that a TTY port has physical hardware that interfaces with an external device. A PTY port is a software emulation of a serial port connection to a device or application through an IP network.

Physical TTY ports do not need to be installed to support PTY ports. There is no connection between these two types of ports. The primary requirement is that you have a device number (DNUM) available for configuring the PTY port.

To configure a PTY port in LD 17, you must have an unused device number (DNUM) available. There are 16 DNUMs available on the system that must be shared by all input/output devices. These device types include TTY, PRT, PTY, AML, and DCH.

Systems can be configured to support a maximum of four PTY ports.

Procedure 31
Configuring a PTY port with LD 17

To configure a PTY port with LD 17:

1. In the OTM system window, on the toolbar, click the System Terminal icon.

   The System Terminal Selection dialog box opens.

2. Click **Ethernet/PPP** (Overlay Passthru), and then click **OK**.

   The System Terminal window opens.

3. Log in with your administrator's login name and password.

   You must have appropriate access privileges to use LD 17.

4. Enter:
   ld 17

   The system responds REQ.

5. Enter:
   chg

   The system responds TYPE.

6. Enter:
   cfn

   The system responds ADAN.

7. Enter:
   new tty <*n*>

   where n is a device number between 0–15. The system responds TTY_TYPE.

8. Enter:
   pty

   The system responds PORT.

9. Enter:
   <*n*>

   Where n is an available port between 0–15 for most large systems. This range varies according to the system option and card/port type. For CS 1000 systems, this range is limited to 0–3. The system responds DES.

10 Enter:
ether

This is a suggestion. You can enter any name that you want to use to describe the port. The system responds FLOW.

11 Enter:
no

The system responds USER.

12 Enter:
mtc bug sch

The system responds TTYLOG.

It does not matter which user types you enter. OTM makes any required changes when you establish a connection. For example, when the Station Administration application accesses a system over a PTY port, only the user type SCH is set for the PTY port.

13 Enter:
no

The system responds BANR.

14 Enter:
yes

15 Log out and close the system terminal window.

To determine how many PTY ports you need to support OTM, determine how many OTM clients need to access the system at the same time.

End of Procedure

IMPORTANT!

The OTM System Terminal connections (Overlay Passthru, VT220, and Virtual System Terminal) require two PTY ports for successful login. Upon login, the first PTY port disconnects immediately. If only one PTY port is free, a connection cannot be established.

In a normal environment, three or four PTY ports should be sufficient. If you have configured four PTY ports, and three or four of the ports are in use, a fourth user attempting to access the system receives a message requesting that they try the connection later.

OTM has been designed to make efficient use of the available TTY ports. Most OTM applications access a system on an “as required” basis. These applications include Station Administration, CPND, ESN, Corporate Directory, Database Backup and Restore, and Traffic. The applications make an Ethernet connection to a system and set up a virtual serial connection for access to the system overlays as required.

Applications such as Alarm Banner, Event Browser, and DBA do not require a PTY port. A special interface exchanges data between the system and OTM for these applications. There are two exceptions: Overlay Passthru/Virtual Terminal and Maintenance Windows. For Overlay Passthru and Virtual Terminal, when a connection is requested, the connection is established between OTM and the PTY port on the system. This port is locked until the connection is terminated. Maintenance Windows does not require access to a PTY port when the application is launched. When you execute a maintenance overlay command, a connection is established to execute the command. Once the command has been executed, the connection is terminated.

OTM System Terminal window

The System Terminal window includes the following:

- an Enter Command edit box in which you type overlay commands
- a Command Results list box that displays your interaction with the overlays and the results
- links to online Help are available for the following:
  - help on the current overlay
  - help on the current prompt
  - help on the last or selected error message
  - one-line description of prompts in the status bar

You use overlays just as you did before a system management tool was available. The one minor difference is that you type into an edit box rather than the last line of the screen as with TTY and Terminal Emulation applications. You still use the <Enter> key to send the typed-in data (an overlay command or response to a prompt).

Using System Terminal

You can do the following from System Terminal:

- Load an overlay as you normally would on a TTY or Terminal Emulation application.
- Cut or copy system events or overlay command results to the clipboard.
- Save or capture the command results to a file.
- Get help on an error message.
- Get help on an overlay.
- Get help on a prompt.
- Monitor system events.

Advantages over a TTY

You now have the following advantages over the old TTY:

- Type in lower case and use the backspace key.
- Copy and Paste in the Enter Command box (useful for repeated commands with only a TN change).
- Scroll back in the command results.
- Copy and Print the command results.
- Capture output to a file as well as to the screen.
- Save the command results to a file.

Getting help on the current overlay

You can get more help on the currently loaded overlay using the Current Overlay command in the Help menu. The Help file is organized in a similar fashion to the *Software Input/Output: Administration* (553-3001-311) and the *Software Input/Output: Maintenance* (553-3001-511).

The Current Overlay button or menu item is disabled when you are not in an overlay.

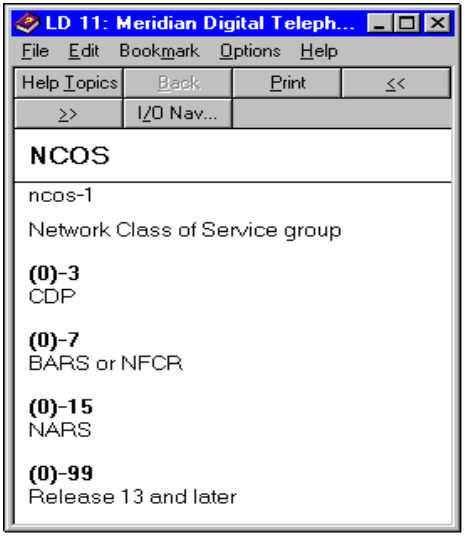
Example:

If you are in LD 10, you can select Current Overlay from the Help menu and then navigate within Help to the CPND prompt sequence. You can click any prompt in the sequence. This displays the Help window for that prompt—the same as Help on Current Prompt.

Getting help on the current prompt

Figure 80 shows an example of the Help you can get on an administration overlay. You load the overlay and respond to the prompts, one at a time. This Help guides you as you load the overlay and respond to the prompts.

Figure 80
Current prompt help example



If an overlay is currently loaded, the Status Bar at the bottom of the window provides a short description of the current prompt.

If the one-line description is not enough, you can read a full description of the prompt in OTM Windows Navigator Help. Choose Current Prompt from the Help menu.

Help on the current prompt is disabled if you are not in an administration overlay.

To get help on any other prompt, choose I/O Navigator from the Help menu.

Getting help on an error message

System Terminal can distinguish error messages from the other text in the Command Results list box. The Error Message command in the Help menu provides the error description in OTM Windows Navigator Help.

You can get help on an error message in the following ways:

- Double-click an error message anywhere in the Command Results.
- Select the Error message command in the Help menu to get help on the last error message (even if it is scrolled off the screen).

- Select an error message anywhere in the Command Results, and then select the Error message command in the Help menu.
- Select the I/O Navigator from the Help menu.

The error message Help window appears when you select the Error message command in the Help menu.

You can also get Help on Meridian Mail System Error and Event Reporting (SEER) messages using the I/O Navigator.

System Terminal menus

Detailed descriptions about the functions of each command in the System Terminal menus are available by clicking context-sensitive Help in the toolbar. System Terminal menus consist of:

- File
- Edit
- View
- Help

Toolbar

The System Terminal toolbar offers several useful shortcuts to the menu commands (Figure 81).

Figure 81
System Terminal toolbar

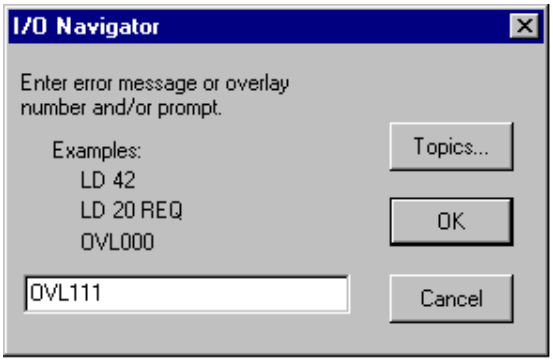
The Find and Find Next icons in the toolbar allow you to search the Command Results for the text string that you enter in the Find box. Find is case- sensitive. The search begins at the current location.

Using the I/O Navigator

The I/O Navigator displays a dialog box that allows you to quickly jump to Help on any overlay, prompt, command, or error message. Select I/O Navigator from the overlay's Help menu or from the I/O Navigator buttons in the appropriate Help files.

The I/O Navigator allows you to navigate through I/O reference Help independent of your current context within the overlays. For example, you do not need to be logged into a system to look up an error message using the I/O Navigator (Figure 82).

Figure 82
I/O Navigator dialog box



Procedure 32
Using the Navigator

1 Type the overlay number, error message number, or prompt in the text entry field

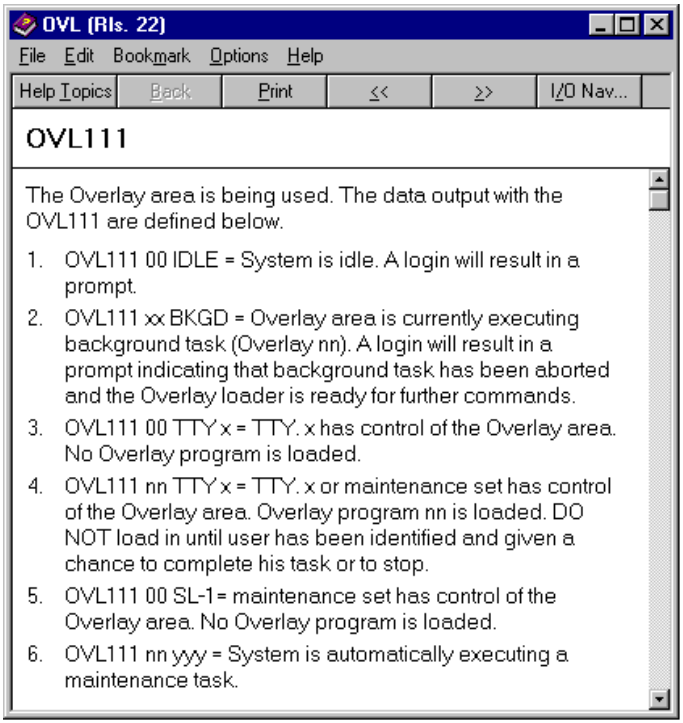
2 Click **OK**.

Help information for the specified overlay, prompt, or error message appears.

The Topics button displays the general reference Help index (Figure 83).

End of Procedure

Figure 83
Example Help Index for an error message


OVL (Rls. 22)
File Edit Bookmark Options Help
Help Topics Back Print << >> I/O Nav...
OVL111
The Overlay area is being used. The data output with the OVL111 are defined below.
1. OVL111 00 IDLE = System is idle. A login will result in a prompt.
2. OVL111 xx BKGD = Overlay area is currently executing background task (Overlay nn). A login will result in a prompt indicating that background task has been aborted and the Overlay loader is ready for further commands.
3. OVL111 00 TTY x = TTY. x has control of the Overlay area. No Overlay program is loaded.
4. OVL111 nn TTY x = TTY. x or maintenance set has control of the Overlay area. Overlay program nn is loaded. DO NOT load in until user has been identified and given a chance to complete his task or to stop.
5. OVL111 00 SL-1= maintenance set has control of the Overlay area. No Overlay program is loaded.
6. OVL111 nn yyy = System is automatically executing a maintenance task.

The Cancel button cancels a search.

Enter an overlay (LD XX) or error code mnemonic (ERR, BUG) to go to the contents page of the appropriate Help file. Enter the error code (BUG3001) or an LD number, and a prompt takes you to the Help topic page.

- If the prompt or error message you specify does not exist, the Help search dialog box appears with the nearest match selected.
- If the overlay number or error message type do not exist, a “Help file not found” information dialog box appears.
- The I/O Navigator command can be used from within Help. You do not need to be connected to a switch.
- There are some combination overlays (for example, one Help file describes two overlays). You can enter either of the overlay numbers. These cases are:

  — LD 36 and LD 41

  - — LD 40 and LD 42
  - — LD 84 and LD 85
- Leading zeros are not required in error messages. For example, entering SCH22 or SCH022 finds the description for SCH0022.
- To look up Meridian Mail System Error and Event Reporting (SEER) messages, enter XXXYY (where XXX is the message class, and YY is the message number—no mnemonic is required). For example, enter 11102.

VT220

The VT220 application models the VT100/220/320 series of terminals to set up communications between your PC and the CS 1000 and Meridian 1 system. With VT220, you can connect to the system using a serial, PPP (point to point protocol), or Ethernet connection. It supports the transfer of ASCII data during a communications session and provides normal TTY and VT220 access to overlays that are not supported by the OTM applications.

Features

VT220 supports the following features:

- double-height, double-width, blinking, bold and underlined characters
- complete graphic character set, including a special font for representing control characters
- scrolling regions
- 80 and 132 column modes
- echo, no echo, local mode, and autowrap on/off
- reverse video characters and reverse video screen
- cursor types—block, underline, vertical line, or none
- selectable cursor blink rate
- user-definable tab stops
- programmable function keys
- display control mode
- national character sets

Accessing VT220

VT220 Ethernet/PPP does not support connection to Meridian Mail. Use only the serial connection to access Meridian Mail.

Before accessing VT220, you must first select the type of terminal emulation session you require. To do so, perform the following steps:

Procedure 33
Select the type of terminal emulation session

1. Click on the system name in the OTM Navigator to highlight it, and click Properties from the File drop-down menu (or simply right-click on the system name and click Properties).
2. From the System Properties window, click the **Communications** tab and select the desired settings file from the Terminal Emulation VT220 Settings drop-down list box (e.g., MMAIL.INI).
3. Click **Applications** tab and click once on System Terminal (VT220) in the Applications list box to highlight it.
4. Select a communications profile for System Terminal (VT220) by clicking on the desired profile name in the Communications Profile drop-down list box.
5. Click **OK** to select these settings and return to the OTM Navigator.

End of Procedure

To access VT220, perform the following steps:

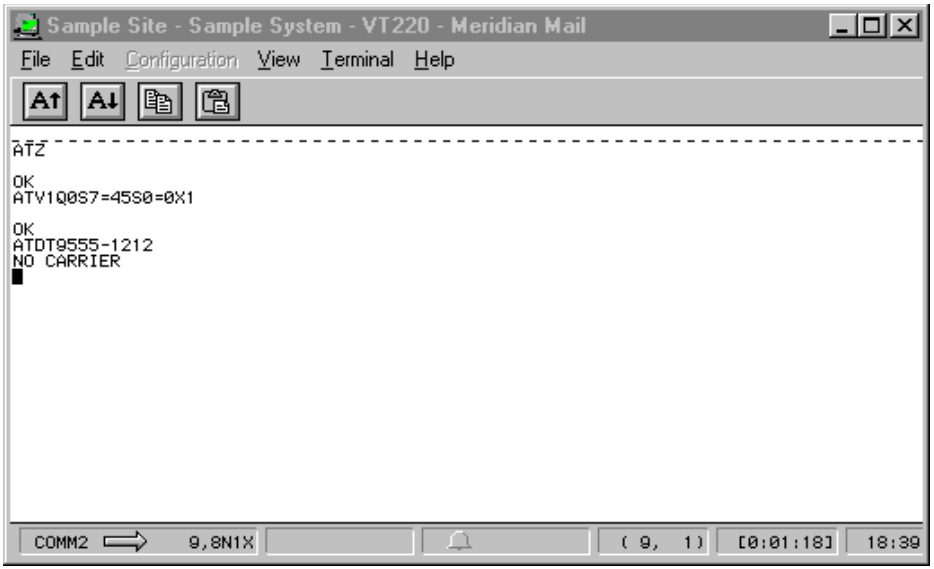
Procedure 34
Accessing VT220

1. From the OTM Navigator, select the desired site and system and click System Terminal from the Maintenance drop-down menu.
2. From the System Terminal Selection dialog box that appears, click Serial (VT220), and then click **OK**.

End of Procedure

VT220 attempts to connect to the terminal based on the communications criteria entered in the System Properties Serial Communications Profile for this system. Once it establishes this connection, the VT220 main window appears listing the commands and graphical tools required for the emulation session (Figure 84).

Figure 84
VT220 window



The following sections briefly list the main functions of VT220:

File menu

The File menu contains functions used to save the VT220 configuration, print the contents of the terminal window, record and replay VT220 terminal emulation sessions, and close the system.

The following is a summary of these functions:

- Save Configuration
- Save Configuration As
- Print
- Print Setup
- Printer Fonts
- Capture
- Playback
- Close

The Save Configuration and Save Configuration As menu items are only available if you have selected a user-defined terminal type (as defined as the Other VT220 type from the OTM System Properties Communications tab). Otherwise, they appear grayed.

Edit menu

The Edit menu contains editing commands used to manipulate the text appearing in the main window.

The following is a summary of these functions:

- Copy
- Paste
- Select All

Configuration menu

Once you start VT220 from the system window of the OTM Navigator with a user defined type of terminal (as defined as the Other VT220 type from the OTM System Properties Communications tab), then you can use the Configuration functions to customize the VT220 settings to suit your needs. The purpose of having the Other type is to allow you to create multiple types of settings based on generic settings.

If you do not select Other or a user-defined type, then you do not require these functions to run VT220. The Configuration command, therefore, appears grayed.

Before you can customize the VT220 settings, you must first select the custom VT220 settings file OTHER.INI using the Communications tab from the OTM Navigator System Properties application. Refer to "Accessing VT220" on page 228 for more details on selecting this option. This file appears in the VT220 settings drop-down list box. When you launch VT220 from this customizable terminal, you can then use the commands which appear in the Configuration drop-down menu to change the settings for VT220.

Once you have edited the VT220 settings using these functions, you must then save the customized configuration file using the Save Configuration As command. Use this command to enter the name of this configuration file for use in later sessions.

VT220 includes a number of setting files that are predefined, depending on the system to which you are connected. For example, M1.INI is a predefined setting file used for a VT220 terminal emulation session with the system, and MMAIL.INI is a predefined setting file for Meridian Mail. These setting files provide the required VT220 settings and cannot be edited.

The following is a summary of the Configuration functions:

- Terminal Setup
- National Replacement Character Set
- Map Keyboard
- Program Keys
- Tab Setup
- Options
- Status Bar

View menu

The View menu contains toggles to adjust the display of the VT220 window, as well as hide and display the Tool Bar, Status Bar, and Keys Window.

The following is a summary of these toggles:

- Terminal
- Hide/Show Tool Bar
- Hide/Show Status Bar
- Hide/Show Keys Window

Terminal menu

The Terminal menu contains commands used to connect and disconnect VT220 for a temporary communications setup. The Connect and Disconnect commands start and stop the terminal emulation. The Temporary Communication Setup function temporarily creates a terminal emulation session based on customizable connection criteria. This setup is only temporary for the current session. When you access VT220 again, it uses the criteria defined for this system in the OTM System Configuration function.

The following is a summary of these commands:

- Connect
- Disconnect
- Temporary Communication Setup...

Help menu

In addition to the standard online help features for VT220, this Help menu contains topics that provide help with the Overlay Enhancer and I/O error messages.

The following is a summary of these Help items:

- Help Topics
- Current Overlay
- Current Prompt
- Error Message
- I/O Navigator...
- About VT220

The Help Topics menu item displays the Help topics for VT220 only if you select a user-defined terminal type (as defined as the Other VT220 type from the OTM system Properties Communications tab). Otherwise, it displays the Help topics for the system.

The Current Overlay, Current Prompt, and Error Message menu items are only enabled if you are running a VT220 terminal emulation for the M1.INI terminal type, and the system is in overlay mode.

The I/O Navigator Help function allows you to obtain information on specific error messages.

The Overlay Enhancer is an online context-sensitive Help function, which allows you to obtain quick and direct access to overlay information while in an active terminal session with the system.

The following Overlay Enhancer Help commands appear in the Help drop-down menu:

- Current Overlay
- Current Prompt
- Error Message

The Current Overlay and Current Prompt commands are only available if an overlay program is loaded and the terminal session is of type Meridian 1, PPP, or Ethernet. Otherwise, they are disabled and appear grayed. The Error Message command is available if the terminal session is of type Meridian 1, PPP, or Ethernet. Otherwise, it is disabled and appears grayed.

Selection of an error message in the VT220 window is not sufficient to access the Overlay Enhancer help. Unlike the Overlay Passthru application, which displays online Help when you double-click the error message, the VT220 Help requires that you first click to select the error message, and then select Error Message in the Help drop-down menu. This then displays Help for the selected error message.

Keyboard mappings

VT220 uses standard keyboard mappings, which when incorporated into a terminal session, match the appropriate VT keys and actions. These default mappings, as shown in the following tables, allow you to run a terminal emulation session using the appropriate keys on a standard 101- or 102-key keyboard.

For example, if you are using VT220 to run Meridian Mail, the Meridian Mail softkeys (which appear at the bottom of the menus and screens) correspond to the appropriate function keys on your keyboard. The Meridian Mail softkeys correspond to the function keys F6 through F10 on a standard 101- or 102-key keyboard. Therefore, in a Meridian Mail session, you press F6 to select Softkey 1, F7 to select Softkey 2, and so on. For more information on the Meridian Mail softkeys, refer to the *.Meridian Mail system administration guide* (553-7001-302).

Table 16 through Table 18 list the keyboard mappings for VT220 on standard 101- and 102-key keyboards.

Table 16
Keyboard mappings - VT key (Part 1 of 2)

VT key	PC key
PF1	Num Lock
PF2	Numpad Slash
PF3	Numpad Star
PF4	Numpad Minus
Find	Insert
Insert	Home
Select	Delete
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Left Arrow	Left Arrow
Right Arrow	Right Arrow
F6	F6

Table 16
Keyboard mappings - VT key (Part 2 of 2)

VT key	PC key
F7	F7
F8	F8
F9	F9
F10	F10
F11	F11
F12	F12
F13	Sys Rq
F14	Scroll Lock
Help	F2
Do	F3
F17	Ctrl-F7
F18	Ctrl-F8
F19	Ctrl-F9
F20	Ctrl-F10

Table 17
Keyboard mappings - VT action (Part 1 of 2)

VT Key	PC Key
Remove	Page Up
Next Screen	Page Down
Prev Screen	End
Hold Screen	F1
Compose	Unmapped
Delete	Backspace
Keypad Command	Numpad Plus
Keypad Enter	Numpad Enter
Break	F5
Long Break	Shift-F5
Control Break	Ctrl-F5
Print Screen	Unmapped

Table 17
Keyboard mappings - VT action (Part 2 of 2)

VT Key	PC Key
Keypad 0	Numpad 0
Keypad 1	Numpad 1
Keypad 2	Numpad 2
Keypad 3	Numpad 3
Keypad 4	Numpad 4
Keypad 5	Numpad 5
Keypad 6	Numpad 6
Keypad 7	Numpad 7
Keypad 8	Numpad 8
Keypad 9	Numpad 9
Keypad Minus	Ctrl-Numpad Minus
Keypad Period	Numpad Del

Table 18
Keyboard mappings - VT action scroll

VT key	PC key
Scroll Left	Ctrl-Left Arrow
Scroll Right	Ctrl-Right Arrow
Scroll Up	Ctrl-Up Arrow
Scroll Down	Ctrl-Down Arrow

System Monitor

The OTM System Monitor is a Microsoft Windows executable program that runs in the background on the OTM Server. System Monitor displays the PC's resources (such as memory and CPU usage), and issues alarms when system resources are low. The System Monitor utility allows you to do the following:

- Turn a system alarm on or off and define the conditions (where, when, and what type of alarm) for sending alarm messages.
- Enable the System Monitor to automatically start when Navigator starts.
- View the virtual, physical, and total memory available.

- View the total CPU usage information.
- View the processes now running on the system.
- View the applications now running on the system.
- View the performance of the Windows server.
- Ping another machine to test network connections.

Access System Monitor

Access the OTM System Monitor with the Microsoft Windows Run command. The path depends on your installation. However, you can locate the System Monitor executable, *SystemMonitor.exe*, in the Nortel\Common Services\Program Files folder.

Double-click the System Monitor executable file. The System Monitor icon appears on the Windows task bar, and the System Monitor starts (the window is minimized on your screen). From this window, you can perform all of the System Monitor functions.

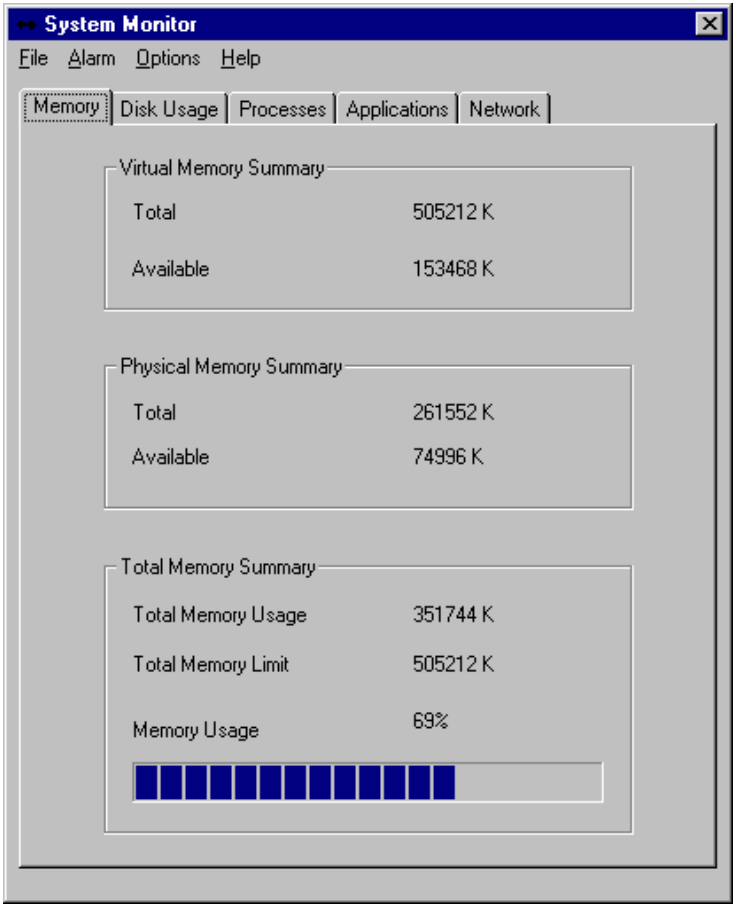
To enable or disable the System Monitor, from **Options > Options**.

View the virtual, physical, and total memory available

To view memory information, from System Monitor window, select the **Memory** tab (Figure 85).

The tab displays the amount of virtual and physical memory available, the total memory limit, and the total memory now in use. The progress bar at the bottom of the tab graphically displays the Memory Usage percentage.

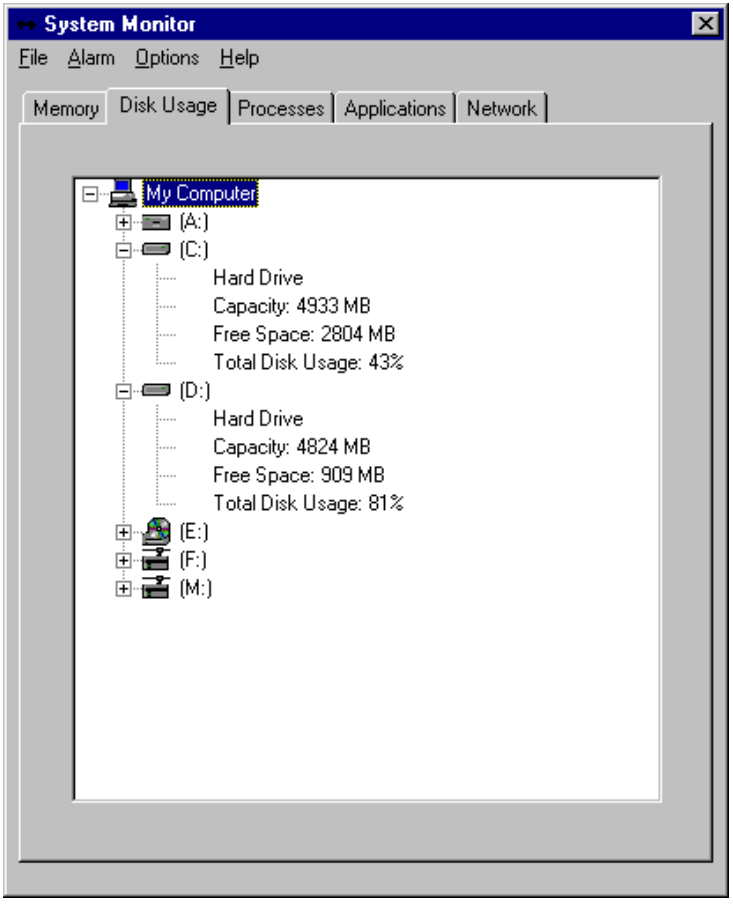
Figure 85
System Monitor window—Memory tab



View Disk Usage information

To view usage information for the disk, from System Monitor, select the **Disk Usage** tab on the System Monitor window (Figure 86).

Figure 86
System Monitor window—Disk Usage tab



View CPU information

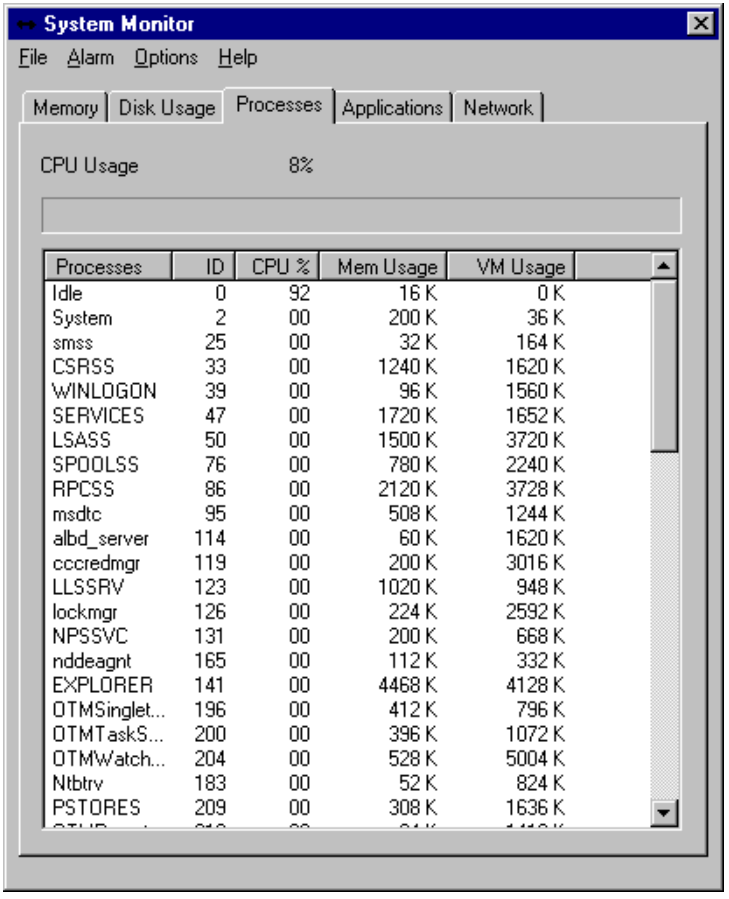
To view usage information for the CPU, from System Monitor, select the **Processes** tab.

The tab displays five columns of information for each process that is running (Figure 87). The CPU usage appears graphically at the top of the tab. The tab displays the following information:

- **Processes:** The name of the process
- **ID:** The process ID

- **CPU%:** The percentage of the CPU used for the process
- **MEM USAGE:** The amount of memory used for the process
- **VM SIZE:** The amount of virtual memory used for the process

Figure 87
System Monitor window—Processes tab

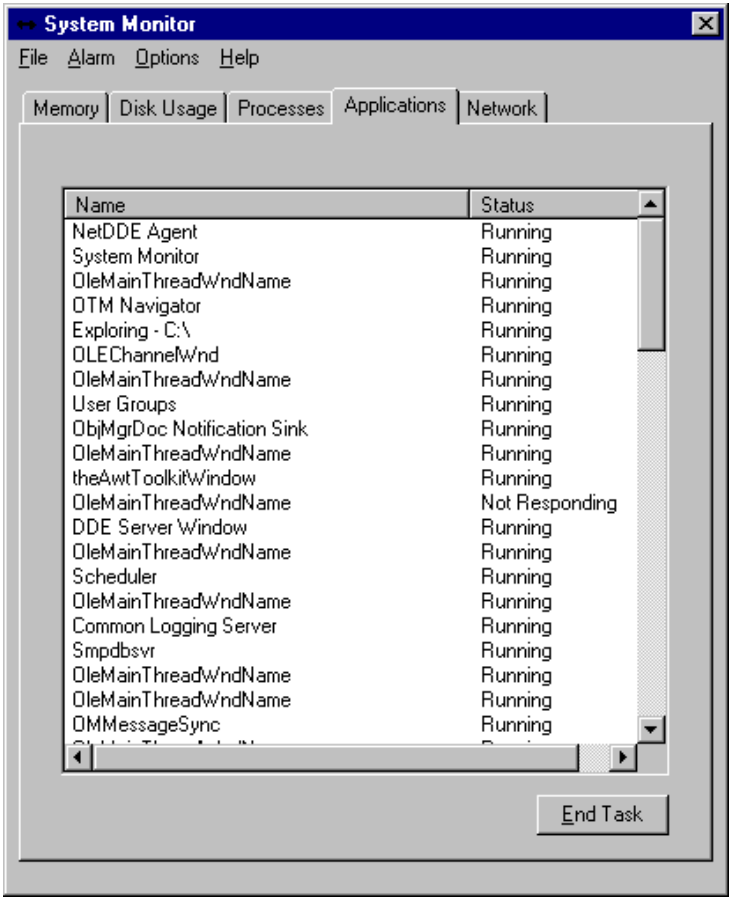

System Monitor
File Alarm Options Help
Memory Disk Usage Processes Applications Network
CPU Usage 8%
Processes ID CPU % Mem Usage VM Usage
Idle 0 92 16 K 0 K
System 2 00 200 K 36 K
smss 25 00 32 K 164 K
CSRSS 33 00 1240 K 1620 K
WINLOGON 39 00 96 K 1560 K
SERVICES 47 00 1720 K 1652 K
LSASS 50 00 1500 K 3720 K
SPOOLSS 76 00 780 K 2240 K
RPCSS 86 00 2120 K 3728 K
msdtc 95 00 508 K 1244 K
albd_server 114 00 60 K 1620 K
cccredmgr 119 00 200 K 3016 K
LLSSRV 123 00 1020 K 948 K
lockmgr 126 00 224 K 2592 K
NPSSVC 131 00 200 K 668 K
nddeagnt 165 00 112 K 332 K
EXPLORER 141 00 4468 K 4128 K
OTMSinglet... 196 00 412 K 796 K
OTMTaskS... 200 00 396 K 1072 K
OTMWatch... 204 00 528 K 5004 K
Ntbtrv 183 00 52 K 824 K
PSTORES 209 00 308 K 1636 K

View and disable applications running on the system

To view and disable applications running on the system, select the **Applications** tab on the System Monitor window (Figure 88).

To stop an application from running, select the application, and then click **End Task**.

Figure 88
System Monitor window—Applications tab



View the performance of the server

To view the server performance, select the Network tab on the System Monitor window. The tab displays the number of bytes received and sent per second by the server (Figure 89).

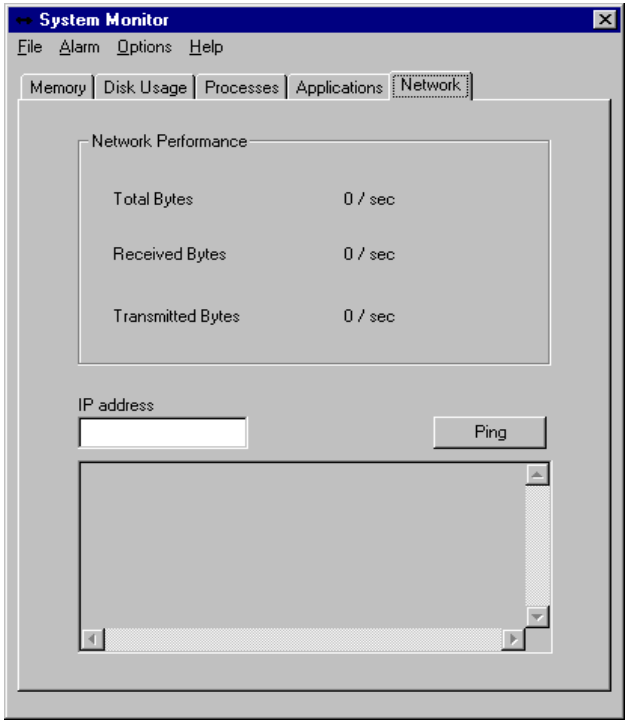
Procedure 35
Viewing performance of other equipment

1 Select the Network tab on the System Monitor window.

2 Enter the IP address of the equipment you want to view.

3 Click **Ping**. The performance for the equipment appears.

Figure 89
System Monitor window—Network tab



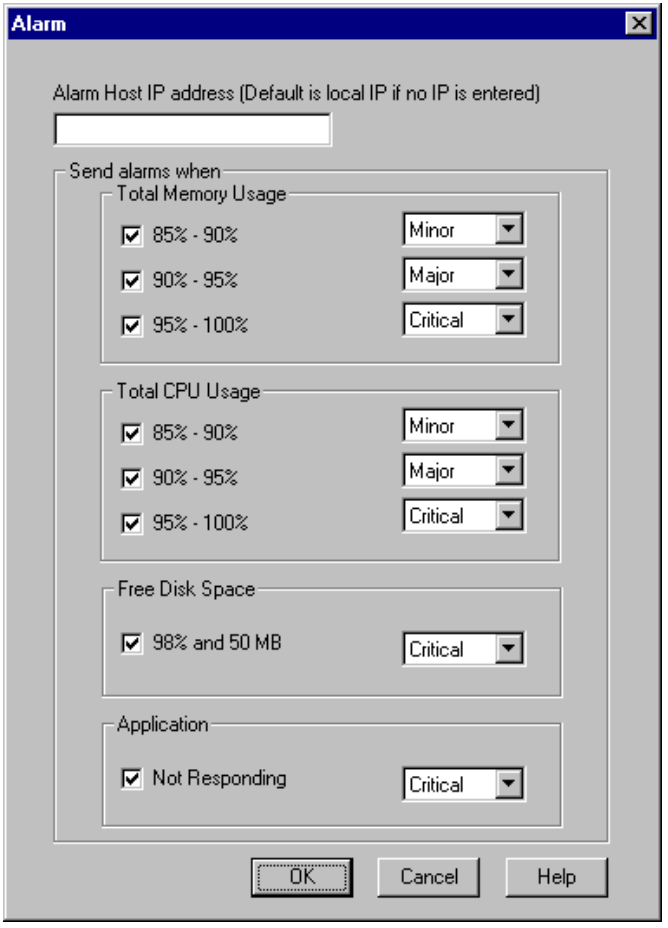
End of Procedure

Set up alarms

You can set up where to send alarm messages when system resources are low, and set the conditions for sending alarm messages.

To configure alarms, select **Configure** from the Alarm menu in the System Monitor window. The Alarm window opens (Figure 90).

Figure 90
Alarm window



Data Buffering and Access (DBA)

The OTM Data Buffering and Access (DBA) application provides a Windows interface to start a live data buffering session and define the session properties for collecting data from a CS 1000 and Meridian 1 system. A network or PPP connection allows collection of CDR and Traffic data. A serial connection allows collection of ASCII data only.

With a PPP or network connection, you can perform the following tasks:

- Schedule a single or routine backup of your system's database files.
- Schedule the retrieval of buffered CDR and Traffic data from a system.
- View collected CDR and Traffic data.
- Back up and restore a system's database to and from a remote device for database recovery.

If you lose a connection or have connection problems during a live data session, the system saves the CDR and Traffic data. You can retrieve the data when the connection is restored.

A serial connection does not support the DBA Backup and Restore functions. With a serial connection, you can perform the following tasks:

- Set up the actions and rules for generating alarms.
- View collected serial data.

If you lose a connection or have connection problems during a live serial data session, data is lost.

Use the DBA application to schedule the following tasks:

- Archive CDR and Traffic from the system.
- Perform a Database Disaster Recovery (backup only).

Access DBA

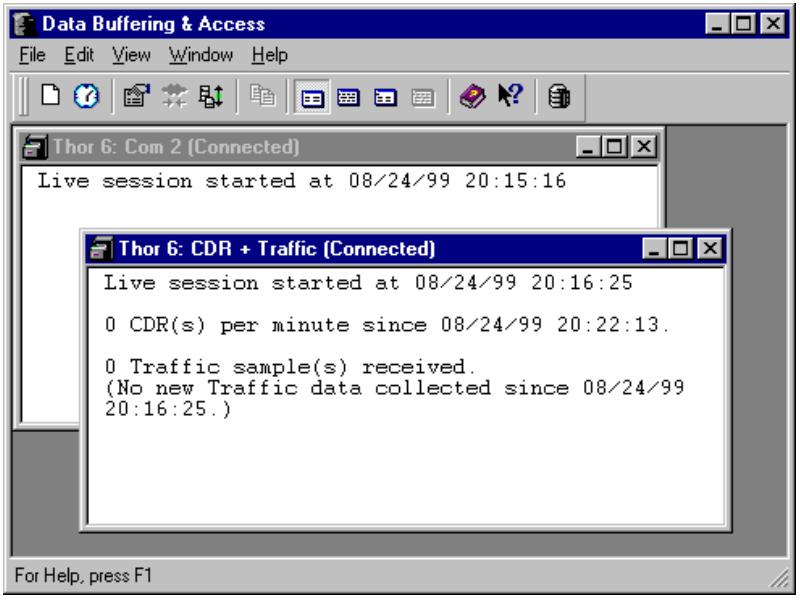
To access DBA:

From the Utilities menu in the OTM Navigator window, select **Data Buffering and Access**.

From Start menu, select **Programs > Optivity Telephony Manager > Data Buffering & Access.**

The DBA main window appears (Figure 91).

Figure 91
DBA main window


Data Buffering & Access
File Edit View Window Help
Thor 6: Com 2 (Connected)
Live session started at 08/24/99 20:15:16
Thor 6: CDR + Traffic (Connected)
Live session started at 08/24/99 20:16:25
0 CDR(s) per minute since 08/24/99 20:22:13.
0 Traffic sample(s) received.
(No new Traffic data collected since 08/24/99 20:16:25.)
For Help, press F1

DBA menus

Descriptions of each command in the DBA menus are available online. Use the Help command to get detailed descriptions of the commands.

DBA Toolbar

The DBA Toolbar provides easy access to many of the menu commands.

Right-click the mouse in the session window to view the pop-up window containing a subset of the menu items.

Enabling DBA with LD 117

The system has to be configured to enable network collection of CDR or Traffic data, or to back up a system's database to the OTM server for disaster recovery purposes. Note that the system has to have the appropriate package as documented in the OTM Installation and Configuration NTP. The configuration is done using LD 117 as follows

Procedure 36
Enabling DBA with LD 117

1 In the OTM system window, on the toolbar, click the System Terminal icon.

The System Terminal Selection dialog box opens.

2 Click Ethernet/PPP (Overlay Passthru), and then click OK.

The System Terminal window opens.

3 Log in with your administrator's user name and password.

You must have appropriate access privileges to use LD 117.

4 Enter:

ld 117

The => prompt appears in the Command Results pane indicating that thesystem terminal application is ready to accept your input.

5 To enable collection of CDR data, enter:

ENL BUF CDR

To enable collection of Traffic data, enter:

ENL BUF TRF

To enable database disaster recovery backup and restore, enter:

ENL DBK

Corresponding operations are available to disable each feature (e.g., DIS BUF CDR).

CAUTION: Do not enter ENL BUF ALL. This will result in accumulation of other data that will not be collected and take up storage space. Manual removal of the data by support personnel may be required. If this command was inadvertently entered, enter DIS BUF ALL, followed by the commands in step 5 to enable CDR or Traffic collection as required.

6 To view the status of buffering data enter:

STAT BUF.

End of Procedure

Configuring a DBA serial port session

Procedure 37
Configuring a DBA serial port session

1 From the Navigator window, choose **Utilities > Data Buffering & Access**.

The DBA main application window appears.

2 From the DBA Main application window, select **File > New Session**.

3 In the “Select an M1 System for Live session” dialog box, a tree displays the Site and Systems that can be used to collect serial data. Select a system from the tree to use for the new session.

4 In the New Session dialog box, select a Com port from the Connect Using combo box. The Connect Using combo box retrieves the available serial ports from the Registry. If you are using an Ethernet connection, then set Connect Using to Network.

Based on whether you have selected a serial or network connection, the fields that can be configured are enabled.

5 Select **Connect Now** once you have configured the settings for the connection. If the connection is successful, the session window shows Connected in the window title. For serial connections, the session is connected if the port is available. This does not indicate that the device is connected to the serial port.

End of Procedure

Start a new live data session

To collect live data, you must start and configure a live data session (an active connection to a system). The DBA application runs continuously during the session, providing access for session configuration and a window for monitoring session information. Special operations, such as a database backup, can be run immediately or scheduled to run within a session.

To maintain a live data session, you must keep the DBA main window open continuously. To minimize screen congestion, hide the DBA main window to remove it from the Windows Desktop. See “Hide and restore the DBA main window” on page 257.

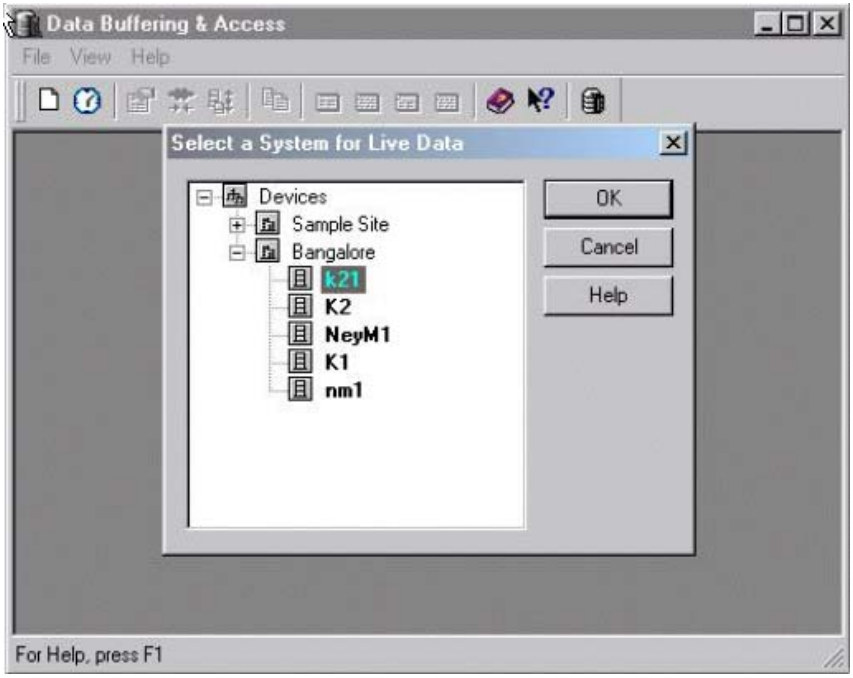
For Small Systems with survivable expansion cabinets and systems with survivable media gateways, it is possible to have live data delivered to DBA from the main cabinet or call server. When the systems are operating in normal mode, there is no call processing taking place on the expansion cabinets or the media gateways; therefore, no CDR data is sent from the expansion cabinets or media gateways.

To start a new live data session:

1 Select New Session from the File menu in the DBA main window.

The Select a System for Live Data dialog box opens (Figure 92).

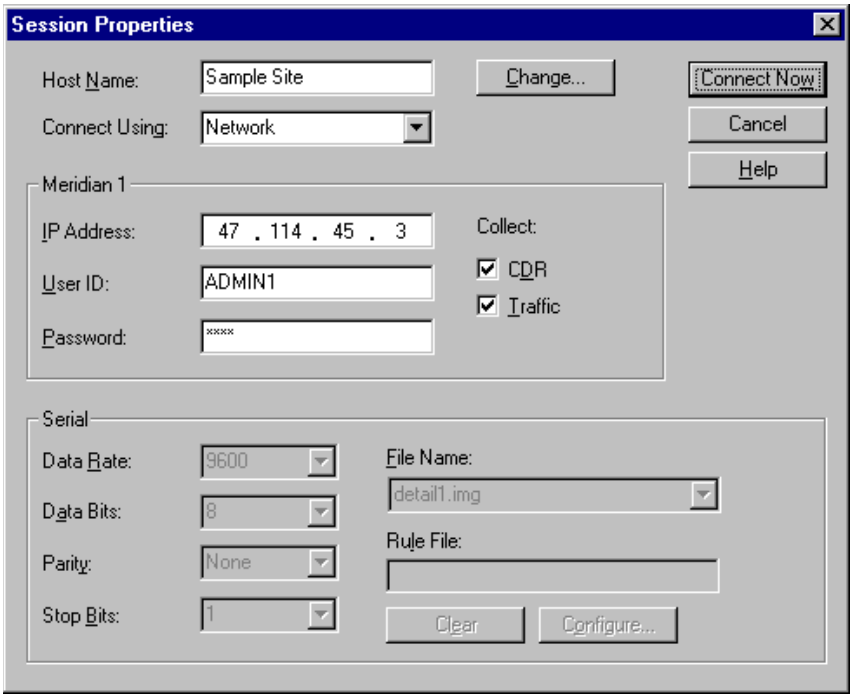
Figure 92
Select a System for Live Data dialog box



2 Select the system for the session from the tree and click **OK**, or double-click the selected system.

The Session Properties dialog box opens (Figure 93).

Figure 93
New Session Properties dialog box



Define session properties for a network connection

Session properties for a network connection are defined as follows:

1. The name of the system appears in the Host Name box.

   To change your system selection, click **Change** to return to the Select a System for Live Data dialog box.

2. Select network connection in the Connect Using box.
3. The IP address for the selected system appears in the IP Address box.
4. (Optional) Enter your login name in the login name box.
5. Enter your login password in the password box.
6. The Host Name, IP Address, login name, and password data exist for the selected system in OTM Navigator. The DBA application automatically fills these fields with values from the OTM database. Any changes made in this dialog box are temporary and lost when the session window closes.

7 Select the Collect boxes to select the types of data (CDR or Traffic, or both) that DBA will buffer.

8 Select Connect Now to connect to the selected system and begin a live data session. Nortel recommends using a live connection, rather than using a hard drive, to collect data from Large Systems.

If you do not buffer all available data types, a dialog box appears asking you to confirm your selection.

A new window opens within your DBA main window. The host name of the connected system appears on the title bar. DBA uses this session window to provide information about the live data session. (See "View session data" on page 253.)

Leave the session window open to maintain the live data session. If you close the window, the live session terminates. If the session terminates, the system begins sending buffered data to one of the following devices, depending on the session parameters you set when establishing the connection:

- Hard drive (not recommended for 11C and CS 1000 systems)
- PCMCIA card (11C and CS 1000 systems)

Guidelines for use of DBA CDR and Traffic data

The CDR and Traffic data that is collected from a system is normally processed by applications that are integrated with OTM. This includes the Telecom Billing System and Traffic Analysis. It is possible to have this data processed by third party vendors, providing the guidelines in this section are followed.

The CDR and Traffic data files are stored on the OTM server in the folder for the system, for example "Nortel\Common Data\Sample Site\Sample Meridian 1". The following file names are used:

- detail1.img - for CDR data
- traffic.dmp - for Traffic data

DBA collects data from systems continuously and merges it into the detail1.img and traffic.dmp files every 15 minutes. If a file is being used by another application, the merge will be done at the next 15 minute interval.

The system folder containing the data files may be accessed by sharing the Nortel folder on the network, making it available to applications on other PCs. Similar security guidelines should be followed as for sharing the folder for OTM PC client access (see the OTM Installation NTP for details). Note that only approved applications may reside

on the OTM server. Running a FTP service on the OTM server is not supported due to conflicts with OTM FTP usage for IP Telephony and ITG applications.

The following guidelines must be followed by processing applications accessing the CDR and Traffic data:

- The files should be emptied or deleted after the data is collected. This prevents the files from growing continuously since new data is appended to the file. Data should be collected on a regular basis (e.g., daily) for the same reason.
- The files should not be held open for a great length of time. The DBA application will retry writing to the file, but if the file is held open for an extensive length of time problems may result. The recommendation is to extract the data and release the file immediately, or alternately to rename the file prior to processing.
- If the file is busy the application should delay for a minute and retry accessing the file. This allows for the DBA application to update the file.
- Only one application can process the DBA data files. For example, OTM Telecom Billing System and another vendor's billing software cannot both process the data from the same file. Processing applications may choose to save the raw data in other files that could be manually specified to other applications.

Schedule a backup or retrieval

DBA enables you to schedule a single or routine backup of your system's database files. You can schedule the retrieval of buffered CDR and Traffic data from the system to the PC.

Supported DBA backups

OTM DBA takes backup of files stored only in Call Server. Back up is taken with the same directory structure as the one present in PBX.

Large systems DBA backups

- **/u/db/:** config.rec, database.rec, aal.dat, viewcfg.tmp, inet.db, eptflag.db, eptdelta.db, smpconf.db, eset1.db, eset2.db, iprem.db, smpserv.db, surv.db, syscfg.db, zone.db
- **/u/db/hi/**: simm.db, inet.db, hi.db, cnib.db, iop.db, cp.db, ipb.db, mud.db, ob_data.db
- **/u/db/rpt** :rpt.log
- **/u/smp_db** :aal.dat, viewcfg.tmp, eptflag.db, eptdelta.db, smpconf.db, dba.ini, *.trf,*.cdr.

Small systems

- **c:/u/db** :config.rec, database.rec, aal.dat, viewcfg.tmp, inet.db, eptflag.db, eptdelta.db, smpconf.db, eset1.db, eset2.db, iprem.db, smpserv.db, surv.db, syscfg.db, zone.db
- **c:/u/rpt:** rpt.log
- **c:/u/smp_db:** dba.ini, dbk.ini, *.trf, *.cdr (DBA initialization file, Traffic and CDR data)

Procedure 38
Schedule a backup

A scheduled job does not configure the system. Use the correct LD 117 settings (DBK and BUF) for the system.

The following procedure describes how to schedule either operation in DBA:

1 Select **File > Schedule** in the DBA main window.

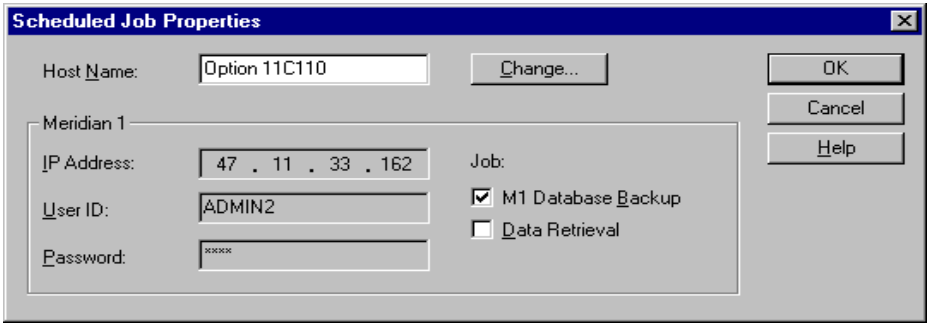
The Select a System for Scheduling dialog box opens.

2 Use the dialog box tree to select a system to schedule.

3 Click **OK**, or double-click on the selected system, to confirm your selection.

The Scheduled Job Properties dialog box opens (Figure 94).

Figure 94
Scheduled Job Properties dialog box



4 To change your system selection, click **Change** to return to the last dialog box.

5 (Optional) Enter the Host Name of the System in the indicated field.

The Host Name, IP Address, login name, and password data for the selected system are stored in the OTM database. The DBA application automatically fills these

fields with the values from the OTM database. In the Scheduled Job Properties dialog box, these fields are read-only. If the values are not correct, enter the correct values in the OTM Navigator System Properties.

6 Select the check box of the operation you want to schedule:

PBX Database Backup - Back up database files.

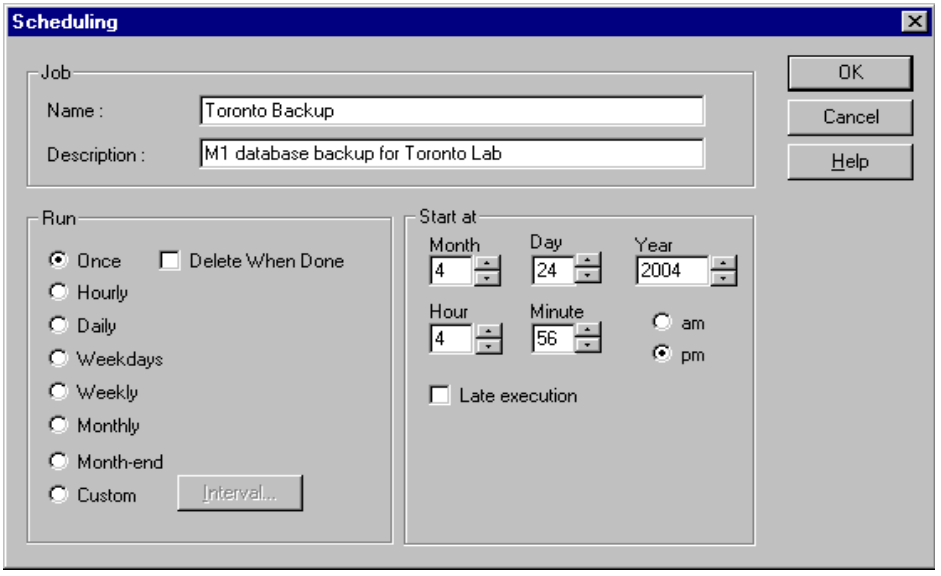
Data Retrieval - Retrieve buffered CDR and Traffic data from the system.

The Data Retrieval check box only functions for CS 1000 systems. Data retrieval is only available for systems that are defined as Meridian 1 PBX 11C Cabinet, Meridian 1 PBX 11C Chassis, or CS 1000 system in the OTM Navigator database.

7 Click **OK** to confirm your settings.

The Scheduling dialog box opens (Figure 95).

Figure 95
Scheduling dialog box



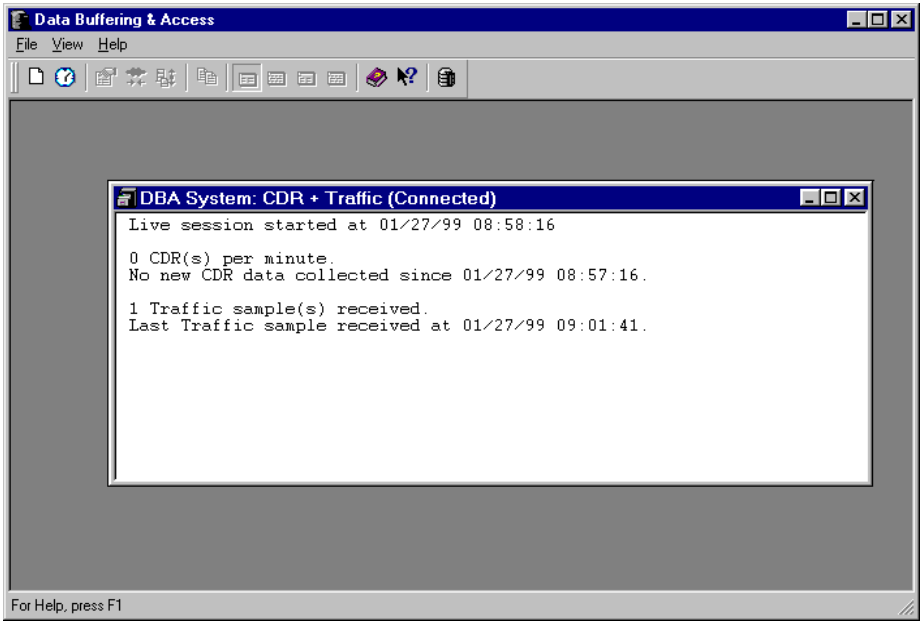
8 Schedule the job by completing the items in the Scheduling dialog box and clicking **OK**.

End of Procedure

View session data

In a live session, you can view the collected CDR, Traffic, and serial data, and the session data-collection statistics (Figure 96).

Figure 96
Sample session window displaying Statistics


Data Buffering & Access
File View Help
DBA System: CDR + Traffic (Connected)
Live session started at 01/27/99 08:58:16
0 CDR(s) per minute.
No new CDR data collected since 01/27/99 08:57:16.
1 Traffic sample(s) received.
Last Traffic sample received at 01/27/99 09:01:41.
For Help, press F1

From the View menu, select one of the following:

- CDR Data to display a snapshot of CDR data collected by DBA (up to the last 15 minutes)
- TRF Data to display a snapshot of Traffic data collected by DBA (up to the last 15 minutes)
- Statistics to display the average number of CDRs per minute, the time of the last Traffic Sample, and the time of the last serial data connection
- Refresh to update CDR, Traffic, and serial data views with the latest collected data

You can use the following Edit menu commands to handle text in the session window:

- Copy to copy text from the session window.

- Select All to select all text in the session window.
- Find to locate selected text in the session window.

Retrieving CDR data from Survivable IP systems

When in survival mode, the survivable expansion cabinets and survivable media gateways operate as if they are standalone Meridian 1 PBX 11C Cabinet or CS 1000 systems. Call Detail Records (CDR) and Traffic Measurements (TRF) are generated only by the expansion cabinets and the media gateways when the systems are operating in survival mode.

In the event that an expansion cabinet or media gateway enters survival mode, it is possible to collect CDR records from the expansion cabinet or media gateway. These records must be manually retrieved, using the XModem procedure, when the expansion cabinet or media gateway returns to normal mode.

XModem procedure

Call Detail Records (CDR) are generated only by the Meridian 1 PBX 11C Cabinet and the survivable media gateways when the system is running in survival mode. The CDR are deleted from the survivable cabinet or survivable media gateway once they have been successfully transferred to the PC. The XCDR command in LD 143 transfers the CDR file from the Meridian 1 PBX 11C Cabinet or the media gateway directly to the OTM PC. There is one CDR file stored on each expansion cabinet or media gateway.

To retrieve the CDR files stored on the survivable expansion cabinets or the survivable media gateways using XModem:

Procedure 39
Retrieve CDR files

1. Establish a connection between the PC and the main cabinet of the Meridian 1 PBX 11C Cabinet or the call server of the CS 1000 system.

   This may be done either remotely through the use of a modem or directly through the use of a serial cable and a modem eliminator.

2. Use a terminal emulation program such as HyperTerminal to begin a TTY session with the system using either the modem or SDI cable.
3. From the PC, go to LD 143 and type **XCDR**.
4. When the system asks for an expansion cabinet number, enter the number assigned to the expansion cabinet or media gateway that contains the dba.cdr file that you want to retrieve.

   The system responds:

```
Getting CDR file for EXP_CAB <num>
Ready to transmit...
```

5 You must invoke the XModem protocol on the PC to receive the CDR file. For example, use the HyperTerminal transfer function to receive the file using XModem protocol.

6 Name the file.

You may give any name you want to the file being received.

Use a file name that will not overwrite any DBA-specific files if DBA is used to retrieve CDR/Traffic files from the main cabinet of the Meridian 1 PBX 11C Cabinet or the call server of the CS 1000 system.

7 Parse the file into the main cabinet or call server's database on the PC.

For information on importing CDR data into Billing applications, refer to *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331).

End of Procedure

PBX Database Disaster Recovery

PBX Database Disaster Recovery provides a quick way to perform a database backup and restore or to schedule a database backup. You can schedule or manually start a backup operation, and the application connects to the switch and retrieves the database files. You can manually start a restore operation to restore the database file to the system. Before performing the restore operation, you must establish a live session with the switch.

PBX Database Disaster Recovery runs separate from the normal database backup feature: Electronic Data Dump (EDD).

The PBX Database Disaster Recovery feature is available for all systems configured in the OTM Navigator. Since survivable expansion cabinets and survivable media gateways are configured as separate systems in the Navigator, the Disaster Recovery feature is available to both the main cabinet, or call server, and the survivable expansion cabinets, or media gateways. You do not need to back up the expansion cabinets and media gateways. Any data that is restored to an expansion cabinet, or media gateway, while it is operating in survival mode is overwritten by the database of the main cabinet, or call server, when the system returns to normal mode.

A backup can be run on a PC that is not the PC used for collecting live CDR or Traffic data, or both.

Procedure 40
Perform a database backup on a PC that is not the PC used for collecting live CDR or Traffic data

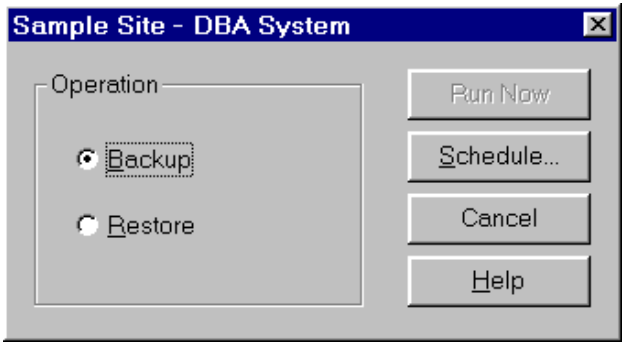
To perform a database backup or restore:

1 Open and select a session window.

2 Select **PBX Database Disaster Recovery** from the File menu.

The PBX Database Disaster Recovery dialog box opens (Figure 97).

Figure 97
PBX Database Disaster Recovery dialog box



3 Click one of the two radio buttons to select an operation:

- Backup - Back up database files to the PC.
- Restore - Transfer earlier backed-up database files from the PC to the system.

CAUTION — Service Interruption

The Restore operation overwrites the existing database files on the system. Before you use the Restore operation:

- Ensure your backup files are valid
- Ensure that no other PC is performing a Backup or Restore

4 Select one of the following buttons:

- **Run Now** to begin the selected operation.
- **Schedule** to indicate a time for routine database backup. You cannot schedule a restore. The OTM Scheduling dialog box opens. Use the dialog box to schedule your database backup. See “Schedule a backup or retrieval” on page 250.

The DBA application displays the status of the backup or restore operation.

End of Procedure

Hide and restore the DBA main window

To maintain a live data session, you must keep the DBA main window open continuously. To minimize screen congestion, hide the DBA main window to remove it from the Windows Desktop. DBA remains active and the DBA tray icon continues to appear on the Windows Toolbar.

To hide the DBA main window, do one of the following:

- Select **Hide Application** from the View menu.
- Click **Hide Main Window** on the toolbar.
- Double-click the DBA tray icon.

To restore your DBA main window, double-click the tray icon.

You can right-click the tray icon to display a pop-up window containing the menu items, Hide Window, or Restore Window. Use these commands to hide or restore the DBA main window, or select Exit to end the program.

Define session properties for a serial connection

Session properties for a serial connection are defined as follows:

Procedure 41
Defining session properies for a serial connection

1 Ensure the name of the selected system appears in the **Host Name** box.

To change your system selection, click **Change** to return to the Select a System for Live Data dialog box.

2 Select serial port connection in the Connect Using box.

If you select a serial connection, use the Rules Manager window to define the actions taken when a specific data pattern appears in the data stream. See "Configure actions and rules" on page 258.

3 Select the data rate for the connection in the Data Rate box.

4 Select the data bit setting for the connection in the Data Bits box.

5 Select the parity setting for the connection in the Parity box.

6 Select the stop bits for the connection in the Stop Bits box.

7 Enter the name of the file to store data collected from the serial port in the File Name box. The file exists under the selected site and system. Enter a new file name or select one of the following files from the drop down list.

- *detail1.img* - File used for CDR data
- *traffic.dmp* - File used for Traffic data

8 Rule File is a read-only field containing the name of the rules file for this DBA session. Edit the field with the Clear and Configure buttons.

- Clear - Removes the file name from the Rule File field.
- Configure - Opens the Rules Manager window shown in Figure 98. You can create a new rules file or open and edit an existing rules file. If you create a new rules file, you must define the actions taken when a specific data pattern appears in the data stream. See "Configure actions and rules' next.

End of Procedure

Configure actions and rules

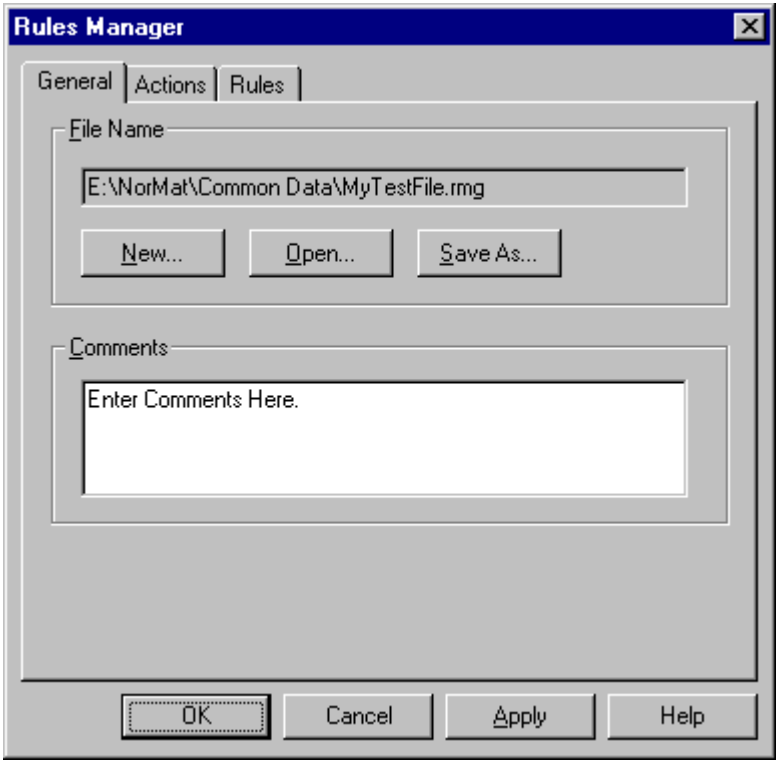
Actions and rules are configured for serial connections. The Rules Manager window allows you to:

- Define the file you want to save or load into the Rules Manager
- Configure new actions or update or delete existing actions
- Configure new rules or update or delete rules, and set the order for applying rules

Define the Rules Configurations file

Use the General tab to select the rules configuration file you want to save and load into the Rules Manager (Figure 98).

Figure 98
Rules Manager—General tab



Procedure 42
Defining the Rules Configurations file

1 The **File Name** box is a read-only field displaying the path and file name of the current rules configuration file. To use a different rules configuration file, click one of the following buttons:

- **New** - Resets the Rules Manager dialog box to blank. If changes have been made to the current configuration, you are prompted to save the changes.
- **Open** - Opens the standard file dialog box, which allows you to select a rules configuration file. If you change the current configuration, you are prompted to save the changes.
- **Save As** - Opens the standard file dialog box allowing you to save an existing rules configurations file under another file name. Enter the new name and click **Save**. The Rules Manager window appears with the name of the file in the File Name box.

2 After you define the configurations file, use one of the following buttons:

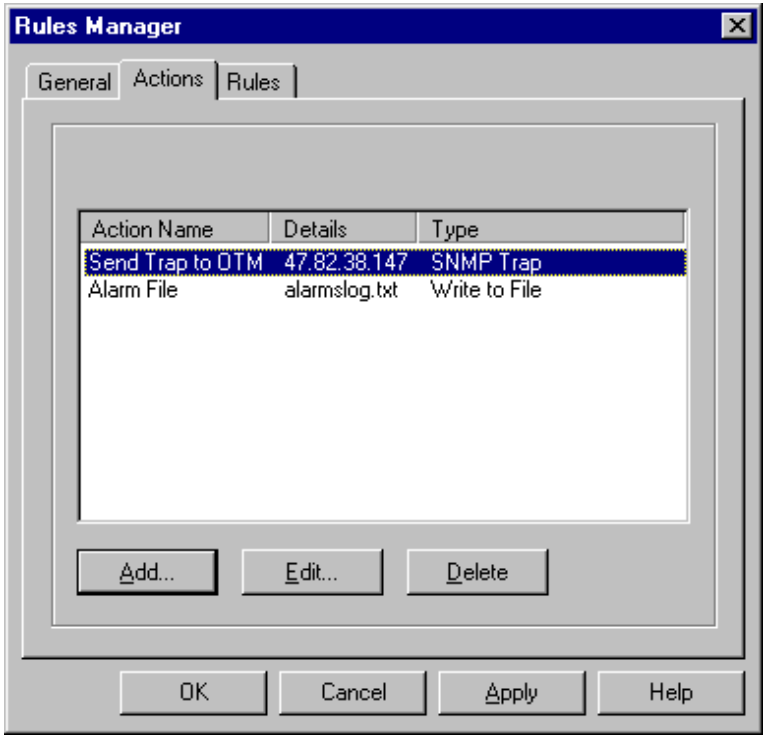
- **OK** - Saves the rules configuration file and closes the Rules Manager window.
- **Cancel** - Discards any changes to the rules configuration file and closes the Rules Manager window.
- **Apply** - Saves the rules configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.
- **Help** - Displays online Help.

End of Procedure

Configured Actions

Use the Actions tab to define new actions or update or delete existing actions (Figure 99).

Figure 99
Rules Manager dialog box—Actions tab



Procedure 43
Configuring actions

1 Select an action from the displayed list and click one of the following buttons:

- **Add** - Opens the New Action dialog box shown in Figure 100. See “Define a New Action” on page 262.
- **Edit** - Opens the dialog box to edit configurations for the selected action.
- **Delete** - Select the action, and then click **Delete** to delete the action.

2 After you define the actions, use one of the following buttons:

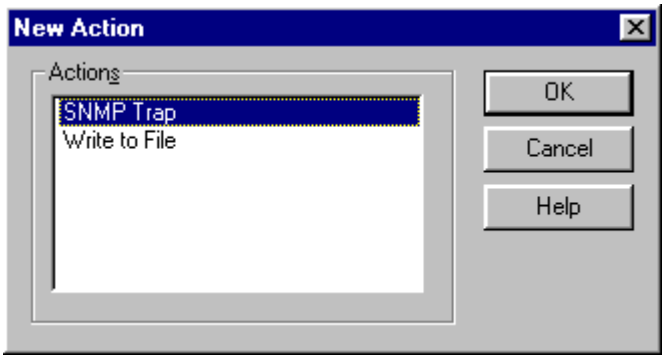
- **OK** - Saves the actions in the configuration file and closes the Rules Manager window.
- **Cancel** - Discards any changes to the actions and closes the Rules Manager window.
- **Apply** - Saves the actions in the configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

End of Procedure

Define a New Action

The New Action dialog box (Figure 100) provides a list of configurations you can apply to the selected action. You can configure the SNMP trap and Write to File actions. Based on the configuration you select, another dialog box, such as SNMP Trap, displays for you to define the configuration for the action.

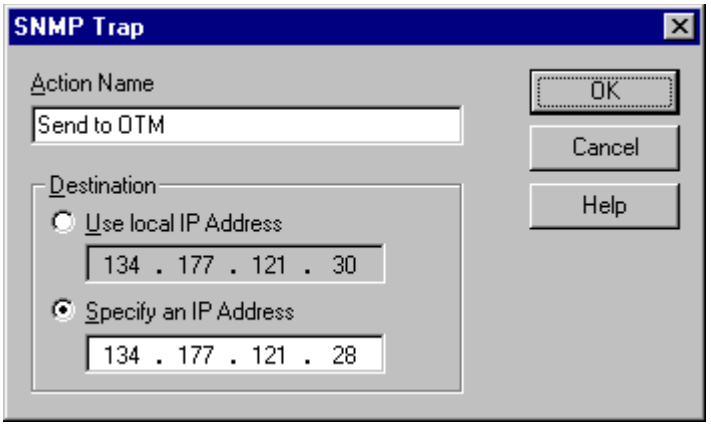
Figure 100
New Action dialog box



SNMP Trap dialog box

The SNMP Trap dialog box (Figure 101) defines the destination for the SNMP Trap action. Select the radio button for the destination of the trap. The valid selections are a local IP address or a user-defined address. The destination address must be running an application capable of taking the SNMP trap sent from DBA. When you select a local IP address (the default), it sends all traps to the same system running DBA and the Trap Server.

Figure 101
SNMP Trap dialog box

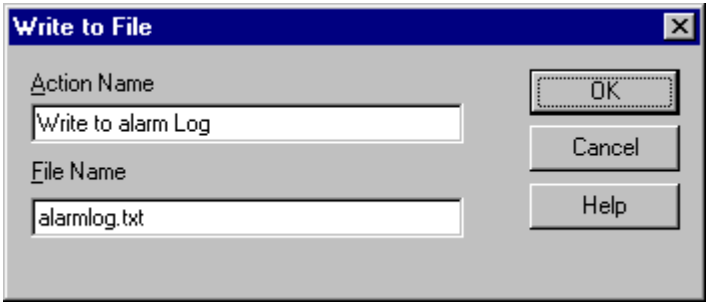


The local IP address does not exist in the Rules Manager configurations file. You can change the local IP address without resetting the value in the defined action in the configuration file.

Write to File dialog box

The Write to File dialog box (Figure 102) allows you to define the destination for a Write to File action. Enter a name for the action and the name of the file for storing the action. The file is in the OTM Common Data Directory in the system level folder. Since the file exists in the common data directory, multiple sessions defined for different sites and systems can use the same Rules Manager file. You can copy the file to another OTM system.

Figure 102
Write to File dialog box



Configure Rules

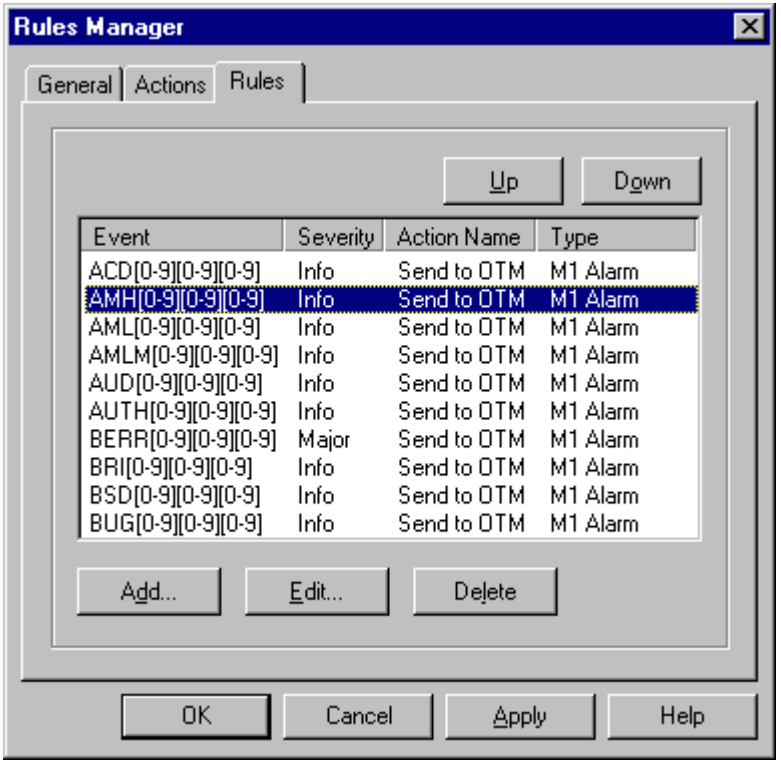
Use the Rules tab to define new rules, update or delete rules, and set the order for applying rules to the data stream (Figure 103).

The order in which the rules appear is important. Order the rules so that the more specific pattern matches occur before the more generic ones. If a generic pattern rule is matched before a more specific pattern rule is tested, the action associated with the generic rule is executed and no additional rule matches are done.

IMPORTANT!

The system does not check for correct syntax. Run a test on the rule you have configured to ensure your input is correct.

Figure 103
Rules Manager dialog box—Rules tab



Procedure 44
Configuring rules

1 Select an event from the displayed list, and then click one of the following buttons.

- **Up** or **Down** - Moves the selected event up or down one position in the list.
- **Add** - Opens the New Rule dialog box (Figure 104). See "Define a New Rule" next.
- **Edit** - Opens the dialog box to change the selected rule.
- **Delete** - Select the event, and then click **Delete** to delete the rule.

2 After you define the rules, use one of the following buttons:

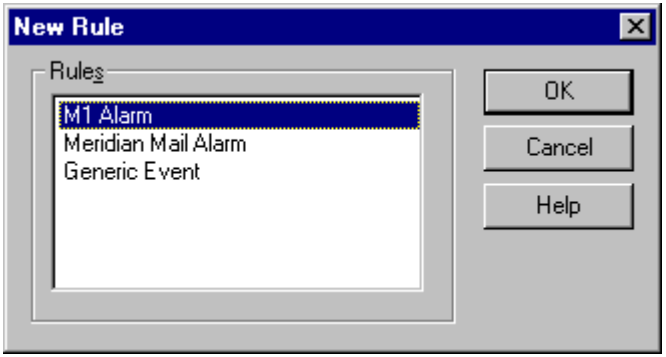
- **OK** - Saves the rules in the configuration file and closes the Rules Manager window.
- **Cancel** - Discards any changes to the rules and closes the Rules Manager window.
- **Apply** - Saves the rules in the configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

End of Procedure

Define a New Rule

The New Rule dialog box (Figure 104) provides a list of the types of rules you can define. You can configure the rules for an M1 Alarm, Meridian Mail Alarm, or a generic event. For example, an M1 Alarm rule can match a Meridian 1 or CS 1000 system alarm code. A match records the data provided with the alarm. A rule for a generic event is for a system other than those listed.

Figure 104
New Rule dialog box



M1 Alarm dialog box

The M1 Alarm dialog box (Figure 105) defines the values for an M1 Alarm rule.

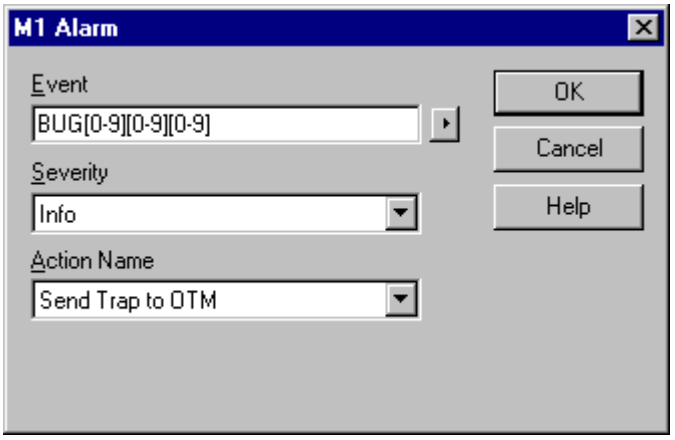
The Event edit box defines the text that will be used to determine if a match is found in the data stream. The Event field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

Note: The regular expression "." does not include spaces in its evaluation.

The Severity field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical and Clear. The default value is Info.

The Action Name field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank, meaning no action will occur if an event match occurs.

Figure 105
M1 Alarm dialog box



Meridian Mail Alarm dialog box

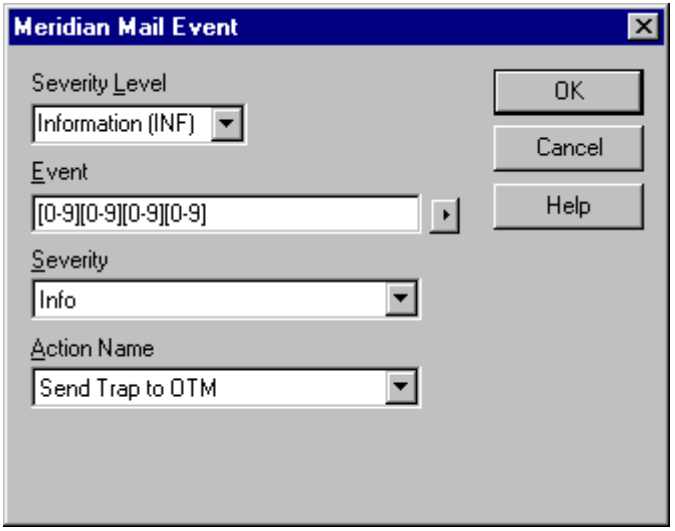
The Meridian Mail Alarm dialog box (Figure 106) defines the values for a Meridian Mail Alarm rule. The Severity Level field contains a list of predefined severity levels. The values provided are Information (INF), Minor (*), Major (**), Critical (***), Clear (OFF), and All. This allows the user to define the Meridian Mail severity level in the data stream, which is used in addition to the Event, to determine if a match is found. The option to chose All for severity level was added to allow the user to match the event regardless of the severity level sent from Meridian Mail.

The Event field defines the text that is used to determine if a match is found in the data stream. The Event field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The Severity field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical, and Clear. The default value is Info.

The Action Name field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank, meaning no action occurs if an event match occurs.

Figure 106
Meridian Mail Event dialog box



Generic Event dialog box

The Generic Event dialog box (Figure 107) allows you to define the values for a generic event rule. Generic systems are not CS 1000 and Meridian 1 systems.

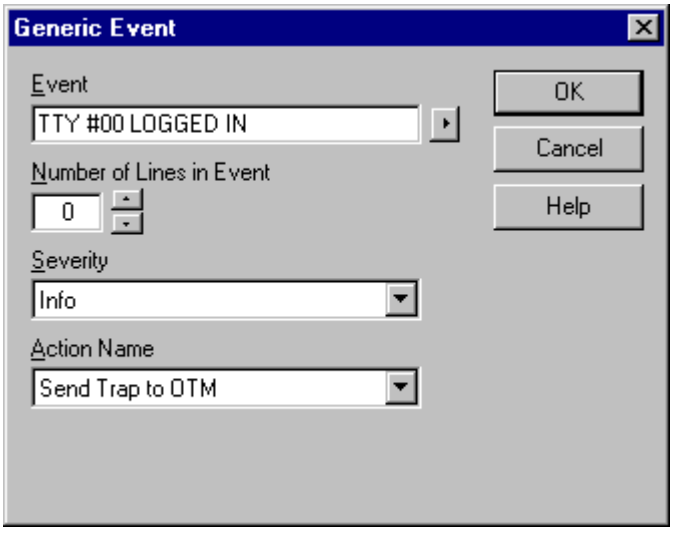
The Event edit box defines the text that is used to determine if a match is found in the data stream. The Event field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The Number of Lines in Event field defines the number of lines in the data stream to capture. The values are 1–5 (0 is the default). A value of zero records the event only.

The Severity field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical, and Clear. The default value is Info.

The Action Name field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank, which means that no action occurs if an event match occurs.

Figure 107
Generic Event dialog box



Utilities

Scheduler

This section contains a general overview of the Scheduler. For more information about how to use the Scheduler windows, refer to the menu help for Scheduler.

Changes that are input using Web Station are scheduled using the web-based scheduling tool. See "Schedule button" on page 827.

The Scheduler must be running in the Windows environment at the time an event is to run. You can start the Scheduler application any time. An event and its tasks do not execute if the Scheduler is not running at the scheduled time.

IMPORTANT!

Before you exit OTM, check the main Scheduler window for pending jobs. If there are pending jobs, click **Log out the current user but keep OTM running**. If you click **Terminate OTM**, the pending jobs will not run.

Access the Scheduler

There are two ways to access the Scheduler:

- From the OTM Navigator, select **Utilities > Scheduler** and schedule the activity directly.
- From any supported application, select the Schedule command where it appears in that application. For example, you can click Schedule in the Reporting dialog box of the Telecom Billing System. You can use the Scheduler functions to enter the information to schedule this application.

  Note: Users must have administrative privileges to run scheduled jobs. A user without administrative privileges can be given read access to the registry key (HKLM\SYSTEM\CurrentControlSet\Enum\Root\SYSTEM), which will allow them to run the scheduled jobs..

Jobs and tasks

The Scheduler represents scheduled activities (such as, data collection, synchronization and reporting) as jobs and tasks.

What is a job?

A job contains the scheduling properties of an activity. This includes such information as the activity's initial execution time; interval for additional executions, status, name, and queue assignments. The job also contains the actual task that identifies the activity's actions. That is, each task that runs that actual activity is assigned to a job. This way, the task can be scheduled. Only jobs can be scheduled; individual tasks cannot be scheduled without a job.

What is a task?

A task contains the actual command used to invoke the activity from the OTM application. This includes such information as the activity's command line (the code used to invoke the activity); its priority in the list of tasks (when it should be executed in relation to any other tasks in the list); and any dependencies associated with it (physical resources on your PC that are needed to execute the activity).

In most cases, one job has one task. This simplifies the process of defining and scheduling activities. You simply schedule the activity, assign it as a task to a job, and then enter its scheduling criteria. There are instances, however, when it is beneficial to assign multiple tasks to a single job (such as in situations where you want to run multiple tasks all at the same scheduled time). The Scheduler allows you to assign multiple tasks to each job after they have been defined.

Execution of tasks in the Scheduler queue

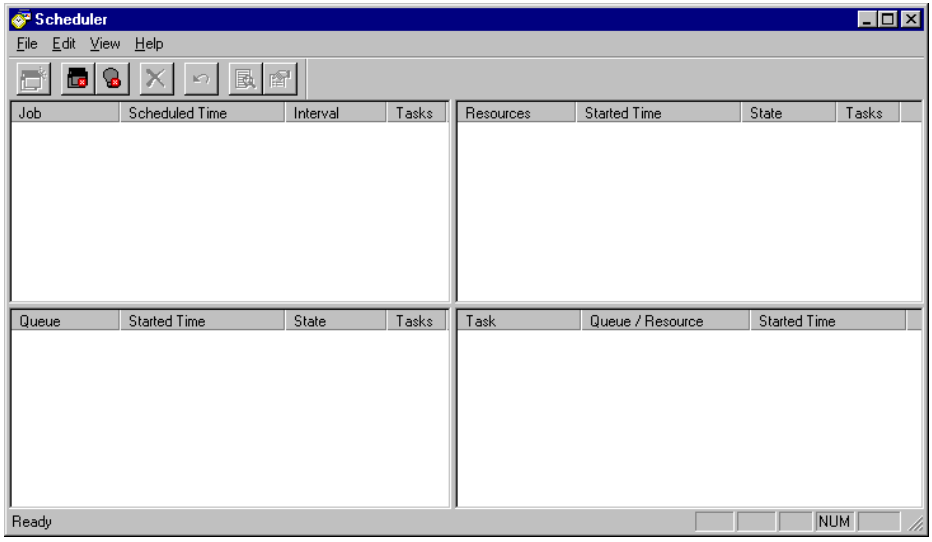
Any task in the Scheduler queue can be executed immediately by right-clicking the task in the Scheduler window and selecting Start Now. Tasks in the queue that have the same priority and are scheduled to occur at the same time are executed simultaneously. When tasks in the queue have different priorities and are scheduled to occur at the same time, the higher priority tasks execute first and are followed by the lower priority tasks.

About the Scheduler window

The following sections describe the Scheduler window and the menus of the Scheduler.

The main Scheduler window (Figure 108) contains sections that list the scheduled jobs and queues. These sections provide the interfaces for the Job, Queue, and Dependency Queue Managers, and list the running tasks for each job. Use these sections to view and access your jobs and queues.

Figure 108
Scheduler window



The main Scheduler window contains the following information sections:

Scheduled jobs section

The Job Manager displays the details of all of the scheduled jobs in the top-left section of the window. The display shows the job name, scheduled date and time for initial execution, intervals, and number of tasks in the job.

Job in the queue section

The Queue Manager displays the current status of jobs in the queue in the bottom-left section of the window. When the last task of a job completes, the queue record disappears.

Dependency resource section

The top-right section of the window displays the current status of the dependency queues whose tasks are executing. The Dependency Queue Manager displays the information. A dependency queue is a collection of tasks requiring the same system resource (such as two tasks needing to access a COM port at the same time).

The properties of a dependency queue's tasks are as follows:

- Each task in the dependency queue is a top task of some queue.

- The order of tasks in the task list of a dependency queue defines the order of task execution.
- You can move tasks in the list up or down or edit tasks, except a task that has started processing.
- When a task completes, its record disappears from the task list.
- Tasks requiring more than one system resource appear in more than one dependency queue. If you delete a task record from one dependency queue, the task record is automatically deleted from other dependency queues.

Tasks running section

The bottom-right section shows the tasks that are running now. From here, you can delete any running tasks. When deleted, a task is no longer monitored by the Scheduler. If you delete a task, the application containing that task continues to run.

File Menu

From the File menu commands, you can manage the Scheduler jobs and queues and exit from the Scheduler. Use the Help command to get detailed descriptions about the functions of each command.

Edit Menu

The Edit menu allows you to manage defined jobs or queues. Use its commands to enable or disable the defined jobs or queues. Use the Help command to get detailed descriptions about the functions of each command.

View Menu

The View menu allows you to:

- Display or hide the Scheduler's toolbar and status bar
- View the task list of the highlighted job or queue
- Arrange the jobs or queues within each section of the window

Help Menu

The Help menu provides assistance on using the Scheduler window.

Scheduled Report Format

When you choose to view a report, you can select the file format in which to view it. However, scheduled reports are always saved in CSV format.

Import and Export

This section contains a general overview of the Import and Export utilities. It describes their basic function and purpose.

Import

The Import utility is used to import data records from an external source to a specific site/system and convert them to a format compatible with the OTM databases. This function is useful for quickly updating your databases with data from another application.

When importing data, you can select from a predefined import configuration or you can define your own configuration. The following paragraphs outline how to import data using a predefined and custom configuration. Review the information later in this section for details on the functions and dialog boxes used to perform these steps.

Import data using a predefined configuration

To import data using a predefined configuration, you must first select the configuration and its component values. This configuration outlines the parameters of the data being imported. This includes such information as the format of the data, the types of records, and their field parameters (character length, position, and so on). OTM includes a set of predefined import configurations for common database types. You can then select the source from where you will import the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to import data using a predefined configuration:

1 Access the Import utility. See “Access the Import utility” on page 274.

2 Select the import configuration components. See “Selecting import configuration components” on page 275.

3 Define the import configuration. See “Defining an import configuration” on page 275.

4 Import the data. See “Import data” on page 277.

Import data using a custom configuration

To import data using a custom configuration, you must first define the import configuration. This configuration outlines the parameters of the data being imported. This includes such information as the format of the data, the types of records, and their field parameters (character length, position, and so on). You can then select from where you will import the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to import data using a custom configuration:

1 Access the Import utility. See “Access the Import utility” next.

2 Define the import configuration components. See “Import configuration list” on page 275.

3 Define the import configuration. See “Defining an import configuration” on page 275.

4 Import the data. See “Import data” on page 277.

Access the Import utility

To import data using a predefined or custom configuration, access the Import utility. Based on which application you are using, the Import utility may be accessed from several locations.

From the **OTM Telecom Billing System**, select **File > Import** from the TBS main window.

From the **System window**, select **Utilities > Import**. The Import dialog box appears allowing you to select from a list of predefined configurations or add your own custom configuration.

Once you have selected the predefined configuration and the source directories, click **Go** to import the data.

Selecting import configuration components

The Import (Select an Import Configuration) function is used to select a predefined import configuration. To select a predefined import configuration:

Procedure 45
Selecting a predefined import configuration

1. Click the import configuration name from the Select an Import Configuration drop-down list box.
2. To define the components of the imported file, click the ellipsis command button (**...**). The Import dialog box appears allowing you to select the tables or databases you want to import.
3. Once you have selected the predefined configuration and the source directories, click **Go** to import the data.

End of Procedure

Import configuration list

If you are creating a new import configuration, then clicking the ellipsis command button (…) accesses the Import -System name dialog box. The Import -System name dialog box contains a list of predefined import configurations. To create a new configuration:

Procedure 46
Creating a new configuration

1. Click **Add**. This accesses the Import dialog box where you can enter the importing information.

   To edit an existing configuration, click the name of the configuration and click **Edit**. Again, this accesses the Import dialog box where you can enter the new definition.
2. To select an import configuration, click the name of the import configuration name to highlight it in the list, and click **OK** .

End of Procedure

Defining an import configuration

The Import Configuration Definition function is used to select and define the type of data being imported into the OTM databases. Enter the following information to define the import configuration:

Procedure 47
Defining the import configuration

1 Configuration Name: Enter the name of this configuration. The name helps to identify this configuration from others in the Import Configurations List.

2 Tables/Database menu tree: Select the type of tables into which the data will be imported. For example, if you are importing data into the OTM Telecom Billing System, you can select from Call Records and Organization Levels to import data into these databases.

3 File/Database Type: From this drop-down list box, select the type of data being imported. Select from the following:

- Microsoft Excel 5/95
- Microsoft Excel 97/2000
- Microsoft Access 2000
- Microsoft Access 97
- ODBC Data Source
- Text File (Comma Separated Values)
- Text File (Fixed Width)

4 File/Database Location: To select the source of the imported database file (i.e., the directory or drive from which the file will be imported), click the ellipsis command button (**...**) next to the File/Database Location field. From the Open dialog box that appears, select the drive and directory of the database file being imported, and then click **OK**. Notice that this appears in the File/Database Location field.

5 Format: To select the format of the imported file, click **Format**. This accesses the Import Format dialog box in which you can select the field properties for the imported file.

6 File/Table Name: From this drop-down list, select the filename of the database being imported.

7 Update Activity: This option determines how this database is updated. Select from the options listed in Table 19.

Table 19
Import update activity options (Part 1 of 2)

Option	Meaning
None	
Append Non Matching	Appends non-matching records

Table 19
Import update activity options (Part 2 of 2)

Option	Meaning
Update Matching	Updates matching records
Update Matching or Append	Either updates or appends as appropriate

8 Description: This field describes the contents of the table selected from the Tables/ Database Name navigation tree.

9 Once you have entered this information, click **OK** to save these edits and return to the previous dialog box.

Import data

10 Once you have selected the import information, click **Go** to proceed. The Import utility then attempts to import this data into the site/system files.

End of Procedure

Restore Call Database using Import utility

This example demonstrates how to restore the Telecom Billing System's Call Database from drive A. To restore the Call Database, perform the following steps:

Procedure 48
Restoring the Call Database

1 Access the Import utility by clicking **File > Import** from the Telecom Billing System main window.

2 Select **Merge CDR/Costed Data** as the Import Configuration.

3 To define the parameters for this restore operation, click the ellipsis command button (…) next to this list box. The Import configuration dialog box appears listing CDR/ Costed Data Merge as the destination (To Telecom Billing System).

4 In the File/Database Location field, enter the source of this restore operation. Click the ellipsis command (…) to view a list of available drives.

5 If you want to restore a range of call records based on their dates, then click the ellipsis command (…) next to the Filter drop-down list box.

6 In the Filters dialog box that appears, create a new filter definition and enter the range of call dates for this filter.

7 Select this new filter name from the Filter drop-down list box.

8 Click **Go** to proceed with the restore operation.

End of Procedure

Export

IMPORTANT!

Records exported by OTM that have the UserID field modified by another program (to any value other than no value) are not updated during an import by OTM. During Import, OTM does not update these modified records but creates new records.

Exporting is exporting data from the OTM databases to an external source. This is useful for archiving a range of data for later retrieval. For example, if you want to archive a range of CDR data to an external source, then you can select a range of data and specify the external source.

When exporting data, you can select from a predefined export configuration, or you can define your own custom configuration.

Export data using a predefined configuration

To export data using a predefined configuration, you must first select the configuration and its component values. This configuration outlines the parameters of the data being exported. This includes such information as the format of the data, the types of records and their field parameters (character length, position and so on). OTM includes a set of predefined export configurations for common database types. You can then select the location to which you will export the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to export data using a predefined configuration:

1 Access the Export utility. See “Access the Export utility” on page 279.

2 Select export configuration components. See “Select export configuration” on page 279.

3 Define export configuration. See “Export configuration definition” on page 280.

4 Export the data. See “Export data” on page 281.

Export data using a custom configuration

To export data using a custom configuration, you must first define the export configuration. This configuration outlines the parameters of the data being exported.

This includes such information as the format of the data, the types of records, and their field parameters (character length, position etc.). You can then select the location to which you will export the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to export data using a custom configuration:

1 Access the Export utility. See “Access the Export utility”, next.

2 Define export configuration components. See “Export configurations list” on page 280.

3 Define export configuration. See “Export configuration definition” on page 280.

4 Export the data. See “Export data” on page 281.

Access the Export utility

To export data using a predefined or custom configuration, access the Export utility. Based on which application you are using, the Export utility may be accessed from several locations.

From the **Telecom Billing System**, select **File > Export** from the TBS main window, there are two predefined configurations "Corporate Directory Export" and "Archive CDR/ Costed Data".

From the **system window**, select **Utilities > Export**. The Export dialog box appears allowing you to select from a list of predefined configurations including "Corporate Directory Export” or add your own custom configuration.

Once you have selected the predefined configuration and the source directories, click **Go** to export the data.

Select export configuration

The Export (Select an Export Configuration) dialog box is used to select a predefined export configuration. To select a predefined export configuration, follow these steps:

Procedure 49
Selecting a predefined export configuration

1 Click the **export configuration** from the Select an Export Configuration drop-down list box.

2 To define the components of the exported file, click the ellipsis command button (…). The Export dialog box appears allowing you to select the tables or databases that you want to export.

If you are creating a new export configuration, then clicking the ellipsis command button (…) accesses the Export - System name dialog box.

3 Once you have selected the predefined configuration and the destination directories, click **Go** to export the data.

End of Procedure

Export configurations list

The Export - System name dialog contains a list of predefined export configurations. To create a new configuration, follow these steps:

Procedure 50
Creating a new configuration

1 Select **(None)** from Select an Export Configuration and click ellipsis command button(...).

2 Click **Add** to access the Export dialog box.

3 Enter the name of the new export configuration and input definitions on this export configuration.

End of Procedure

Export configuration definition

The Export Configuration Definition dialog box is used to select and define the type of data being exported from the OTM databases. Enter the following information to define the export configuration:

Procedure 51
Defining the export configuration

1 Configuration Name: In this field, enter the name of this configuration. This is for informational purposes and helps to identify this configuration from others in the Export Configurations List.

2 Tables/Database menu tree: From this menu tree, select the type of tables from which the data will be exported.

3 File/Database Type: From this drop-down list box, select the type of data being exported.

4 File/Database Location: To select the destination of the exported database file (for example, the directory or drive to which the file will be exported), click the ellipsis button (…) next to the File/Database Location field. From the Directory Location Form dialog box which appears, select the destination drive and directory. Click **OK**. Notice that the destination you selected appears in the File/Database Location field.

5 Export Profile Format: To select the format of the exported file, click **Format**. This accesses the Export Format dialog box in which you can select the field properties for the exported file.

6 File/Table Name: From this drop-down list box, select the filename of the database being exported.

7 Update Activity: This option determines how this database is updated. Select from the options in Table 20:

Table 20
Export update activity table

Option	Meaning
None	
Append All	Appends all records
Delete All Rows Then Append	Deletes rows then appends records
Recreate Table Then Append	Recreates table then appends records

8 Purge records after writing: Select this check box to delete the records from the source file after they have been successfully written to the destination file.

Note: This action is irreversible. You should, therefore, use caution if selecting this option.

9 Description: This field describes the contents of the table selected from the Tables/ Database Name menu tree.

10 Once you have entered this information, click **OK** to save these edits and return to the previous dialog box.

Export data

11 Once you have selected the export information, click **Go** to proceed. The Export utility then attempts to export this data from the site/system files to the external device or file.

End of Procedure

Archiving Call Database using Export utility

This example demonstrates how to archive the Telecom Billing System's Call Database to drive A. To archive the Call Database, perform the following steps:

Procedure 52
Archiving the Call Database

1. Access the Export utility by clicking **File | Export** from the Telecom Billing System main window.
2. Select **Archive CDR/Costed Data** as the Export Configuration.
3. To define the parameters for this archive operation, click the ellipsis command button (…) next to this list box. The Export configuration dialog box appears listing CDR/Costed Data as the source (from Telecom Billing System).
4. In the File/Database Location field, enter the destination of this archive operation. Click the ellipsis command (…) to view a list of available drives.
5. If you want to archive a range of call records based on their dates, then click the ellipsis command (…) next to the Filter drop-down list box.
6. In the Filters dialog box that appears, create a new filter definition and enter the range of call dates for this filter.
7. Select this new filter name from the Filter drop-down list box.
8. Select **Purge Records After Writing** option to delete the range of call records from the original Call Database once the call records have been copied to the external source. This clears up disk space on your PC.
9. Click **Go** to proceed with the archive operation.

End of Procedure

Database Compact and Repair

This section describes the functions and purpose of the OTM Database Compact and Repair utility. For complete details on using this utility, refer to the online Help included with the software.

CAUTION — Service Interruption
This utility creates a temporary copy of the databases as they are compacted. Therefore, you must have enough disk space for both the original and the duplicate databases. This operation fails if the system runs out of disk space.

The Compact/Repair Utility is used only with Microsoft Access 95/97 database file formats.

The Compact/Repair Utility cannot be used for later versions of Microsoft Access such as 2000, 2002 or to compact password-protected files.

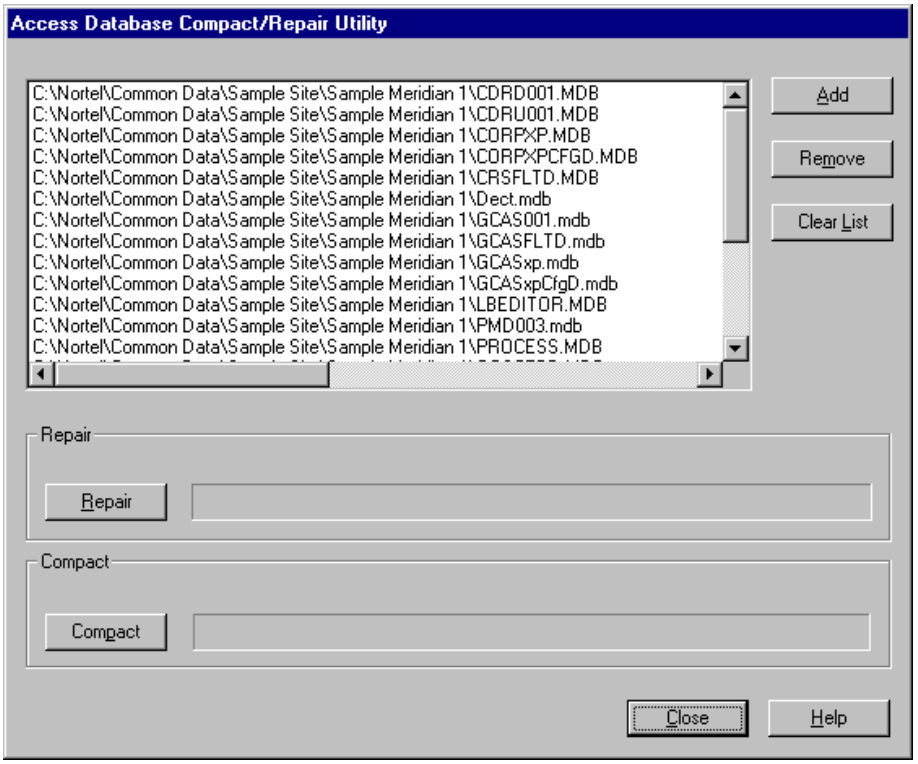
You cannot run this utility for a specific system if you are running an application within that system.

Before proceeding with this utility, exit from the application that is running within that system.

Procedure 53
Compacting a database

1. Double-click the desired system in the OTM Navigator tree.
2. Select **Compact** from the Utilities menu. The Access Database Compact/Repair utility dialog box appears (Figure 109).
3. Specify the files you want to compact or repair, and then click **Compact**.

Figure 109
Access Database Compact/Repair Utility window



End of Procedure

Backup and Restore

OTM's Backup and Restore utilities provide convenient options for safeguarding, cloning, and restoring OTM data on a PC. The Backup utility lets you create an OTM backup file of PC-based system property and application data for any or all sites and systems. The Restore utility lets you restore a backup file to the same or different sites and systems on the same or other PCs.

The Backup and Restore utilities have no effect on data. To secure OTM data that has been uploaded to the system, you must use OTM's Electronic Data Dump feature described on page 337.

Media, files, and data types

You can create an OTM backup file on the PC's hard drive, a network drive, disks and other removable disks, or any other available media that meets your requirements for convenience and file space.

All backup data is written to a single folder for each backup operation. This folder includes the following files:

- Zip file (*.ZIP), the backup file in compressed format
- Log file (*.LOG), providing the backup file's date; type; OTM version; and sites, systems, and applications by name

You can back up and restore data for all or any combination of the following OTM applications:

- TBS
- Call Tracking
- ESN
- Station Administration
- Traffic Analysis
- CRS
- DECT
- GCAS

The full OTM backup also includes:

- Web Navigator data such as user groups
- Client list

You can back up and restore data for these applications across multiple sites and systems at the same time.

Applications are associated with specific sites and systems. All backups of application data include the system property data associated with the selected site or system.

When you restore data from a backup file, you have the option ***not*** to restore system property data. This option is useful in cases where the destination site or system is preconfigured and you do not want to overwrite its system property data. For example,

system property data such as communication ports, modem configuration, and user ID and password may be different from one PC to the next.

Benefits

The Backup and Restore utilities provide the following key benefits:

- cloning
- moving data offsite
- disaster recovery

Cloning

The process of copying system property and application data associated with one site or system to another site or system is called *cloning*. Copying data to another site or system can be a great timesaver. It can save you from having to enter a large amount of similar data one item at a time.

After cloning selected data, you can simply focus on making whatever changes are necessary to the cloned data. This operation is very flexible. The destination site or system can be new or already exist, and it can be on the same PC or on another PC.

If you back up data from one PC and restore it to another, you must perform this operation under the same version of OTM. You cannot back up data from a PC with an older version of OTM and then restore the data to a PC with OTM. Upgrade the older version of OTM before performing this type of *cloning* operation.

Moving data offsite

If you want to maintain or occasionally modify OTM data offsite, an OTM backup file provides the solution. You can restore the backup file on any PC that has the same version of OTM installed.

When you finish modifying OTM data, create a new backup file. Then you can restore the modified data to the original or primary PC where OTM is installed.

This operation works particularly well for modifying application data. Remember *not* to restore system property data from one PC to another if the PCs need to have different configurations for the corresponding sites and systems.

Disaster Recovery

An important part of safeguarding your OTM data is having a disaster recovery plan. This plan should consider who makes the backups, what is backed up, how often, on what media, and where the backups are stored.

The full OTM backup is a more comprehensive backup option that is designed for disaster recovery. This option automatically backs up all sites, systems, and applications, as well as LDAP settings, DBA, the Client list, and Web Navigator data such as user groups. Custom Help and Alarm Notification registry settings are not backed up. In addition, the full OTM backup saves user-created files, such as scripts and customized reports. Consider performing this type of backup at least once a month and storing the backup file in a safe place.

You should back up the Alarm Notification control and script files separately. The shipped files may be replaced during a software upgrade.

In the event of unrecoverable data loss, restore your full OTM backup file first. All file contents are restored to the PC. Then, if you have backups for selected sites, systems, and applications that are more recent, restore them next.

OTM executables and files that can be reinstalled from the OTM CD are *excluded* in a disaster recovery backup. If OTM executables have been damaged or lost due to a hard-disk crash, for example, you must reinstall OTM on your repaired or replaced PC before restoring your full OTM backup.

Backing up a single Communication Server 1000 system

A backup of a single Communication Server 1000 system includes the Call Server and all of its applications, the Gatekeeper Zone (Gatekeeper IP addresses), and Signaling Server IP address(es). All Media Gateways belonging to the system as well as all enabled Media Gateway applications are included in the backup. You are not given the option of selecting the applications that you want to have backed up.

You cannot back up or restore an individual Media Gateway. The Media Gateways are only backed up and restored as components of the Communication Server 1000 system to which they belong.

The backup operation backs up OTM data. This backup operation does not back up the actual Communication Server 1000 system or MG 1000B.

Backing up an MG 1000B

Although an MG 1000B is linked to a CS 1000E Call Server or CS 1000S Call Server, it is backed up like a separate system with the following exceptions:

- When you back up a single MG 1000B, the linked system and the association between the two is backed up. Note that MG 1000B appears as a system type.
- In a full OTM backup, the system and its associated MG 1000B(s) are backed up. The relationship between them is saved.
- When you back up a single CS 1000 system, its Media Gateways are backed up; however, its MG 1000Bs are not.

Performing a Back up of OTM

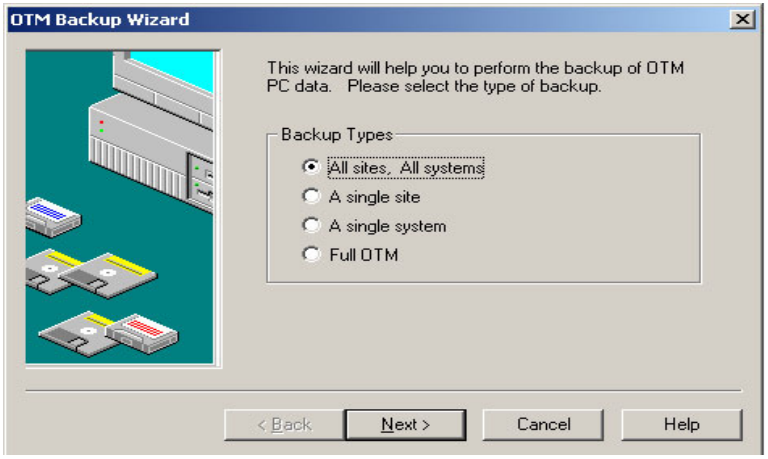
Media Gateway restriction

A Media Gateway System cannot be backed up/restored alone. It must be associated with a CS 1000 system.

Procedure 54
Performing a backup of your OTM data and applications

1 In OTM Windows Navigator, select **Utilities > Backup.** The **OTM Backup Wizard** window opens (Figure 110).

Figure 110
OTM Backup


OTM Backup Wizard
This wizard will help you to perform the backup of OTM PC data. Please select the type of backup.
Backup Types
All sites, All systems
A single site
A single system
Full OTM
< Back
Next >
Cancel
Help

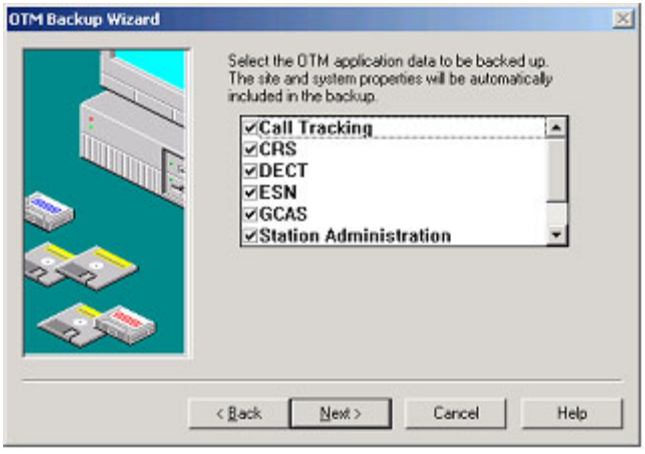
2 Select one of the following backup types:

- For **All sites, All systems**, click **Next** and proceed to step 3 a.
- For **A single site**, click **Next** and proceed to step 3 b.
- For **A single system**, click **Next** and proceed to step 3 c.
- For **Full OTM**, press **Next** and proceed to step 3 d.

3 Choosing application data, site, system, or directory:

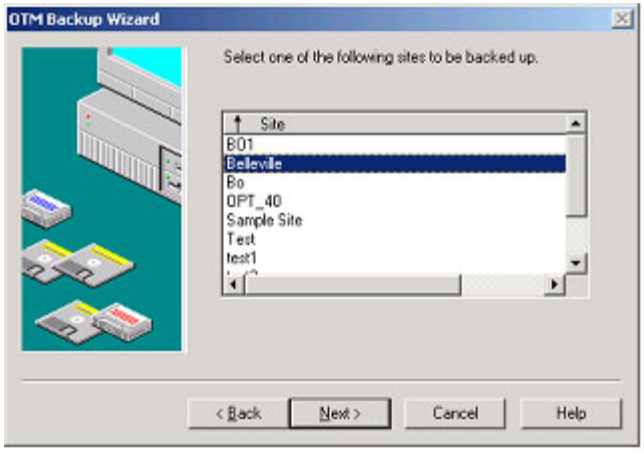
a. For All sites, All systems, the **Backup application data** selection window opens (see Figure 111). Select the OTM application data to be backed up and click **Next.** Proceed to step 4 a.

Figure 111
Backup application data selection



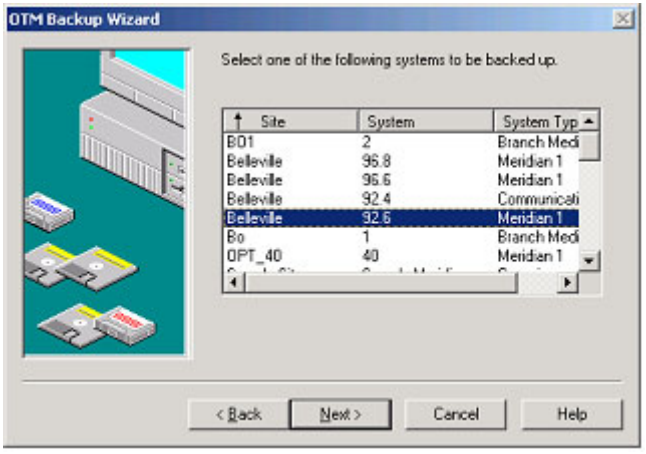
b. For a single site, the **Backup single site** selection window opens (see Figure 112 on page 290). Select a site and click **Next**. Proceed to step 4 b.

Figure 112
Backup single site selection



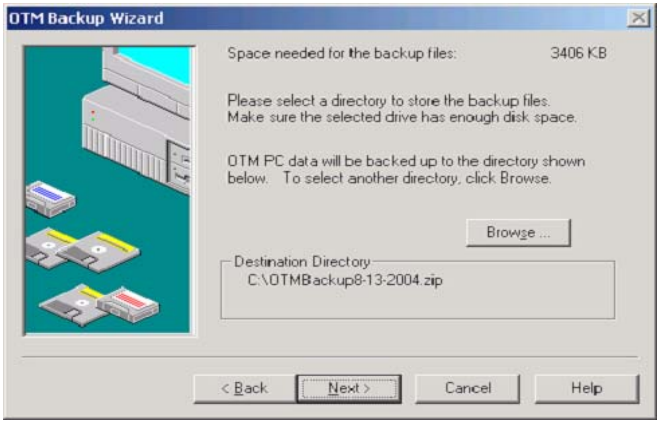
c. For a single system, the **Backup single system** selection window opens (see Figure 113) Select a system and click **Next**. Proceed to step 4 c.

Figure 113
Backup single system selection



d. For Full OTM , the **Backup directory selection** window opens (see Figure 114). Select a directory to store the backup file and click **OK.** Proceed to step 4 d.

Figure 114
Backup directory selection


OTM Backup Wizard
Space needed for the backup files: 3406 KB
Please select a directory to store the backup files.
Make sure the selected drive has enough disk space.
OTM PC data will be backed up to the directory shown below. To select another directory, click Browse.
Browse ...
Destination Directory
C:\OTMBackup8-13-2004.zip
< Back
Next >
Cancel
Help

Note: Saving backups can overwrite existing Backup files. Ensure you are choosing the correct Backup file.

4 Complete one of the following steps:

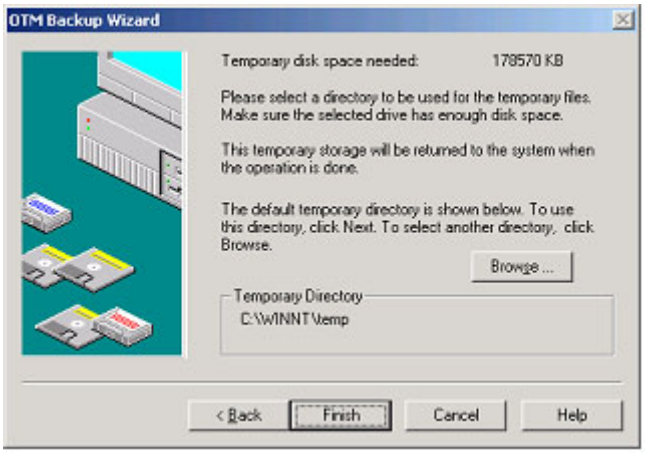
a. For all sites and all systems, the **Backup directory selection** window opens (see Figure 114 on page 291). Select a directory to store the backup file and click **OK.** Proceed to step 5 a.

b. For a single site, the **Backup application data** selection window opens (see Figure 111 on page 289). Select the OTM application data to be backed up and click **Next.** Proceed to step 5 b.

c. For a single system, the **Backup application data** selection window opens (see Figure 111 on page 289). Select the OTM application data to be backed up and click **Next.** Proceed to step 5 c.

d. For Full OTM , the **Backup temporary disk space** window opens (see Figure 115 on page 292). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 5 d.

Figure 115
Backup temporary disk space


OTM Backup Wizard
Temporary disk space needed: 178570 KB
Please select a directory to be used for the temporary files. Make sure the selected drive has enough disk space.
This temporary storage will be returned to the system when the operation is done.
The default temporary directory is shown below. To use this directory, click Next. To select another directory, click Browse.
Browse ...
Temporary Directory
C:\WINNT\temp
< Back
Finish
Cancel
Help

5 Complete one of the following steps:

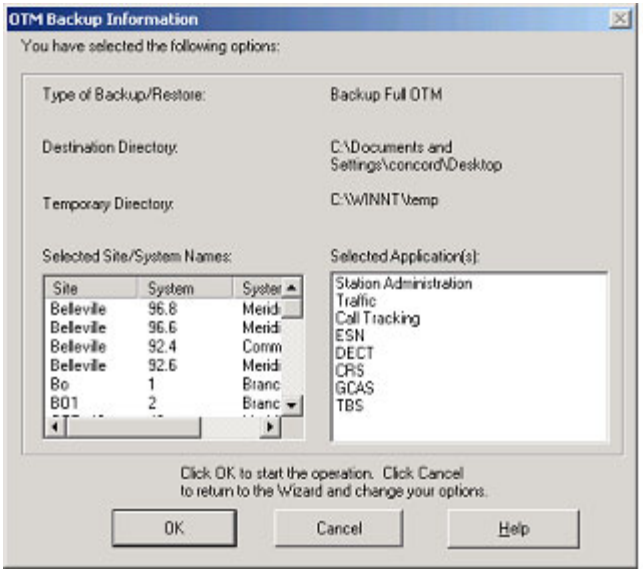
a. For all sites and all systems, the **Backup temporary disk space** window opens (see Figure 115). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 6 a.

b. For a single site, the **Backup directory selection** window opens (see Figure 114 on page 291). Select a directory to store the backup file and click **OK.** Proceed to step 6 b.

c. For a single system, the **Backup directory selection** window opens (see Figure 114 on page 291). Select a directory to store the backup file and click **OK.** Proceed to step 6 c.

d. For Full OTM, the **OTM Backup Information** window **o**pens (see Figure 116 on page 293). Click **OK** to start the backup operation, or click **Cancel** to go to the **OTM Backup Wizard** and change your options**.** Proceed to step 6 d.

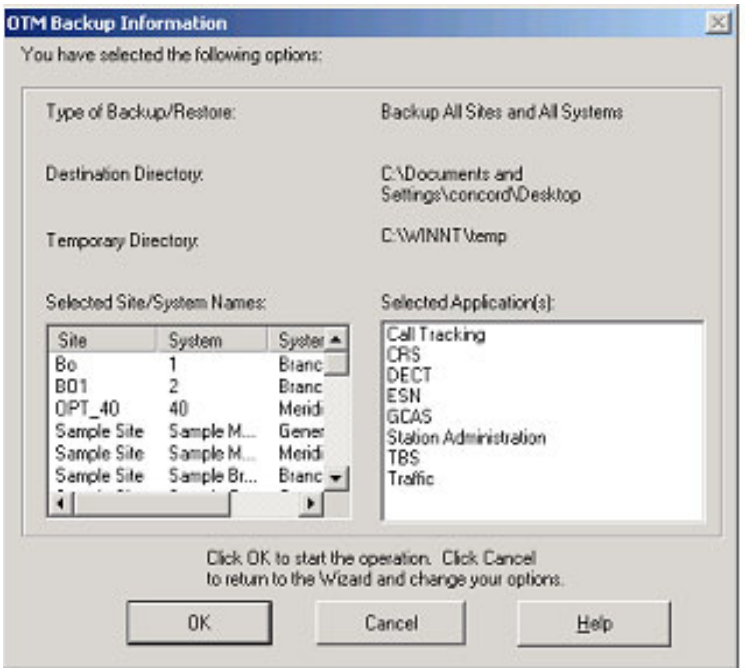
Figure 116
Backup Information (Full OTM)



6 Complete one of the following steps:

a. For all sites and all systems, the **OTM Backup Information** window opens (see Figure 117 on page 294). Click **OK.** Proceed to step 7 a.

Figure 117
OTM Backup Information (All Sites and All Systems)

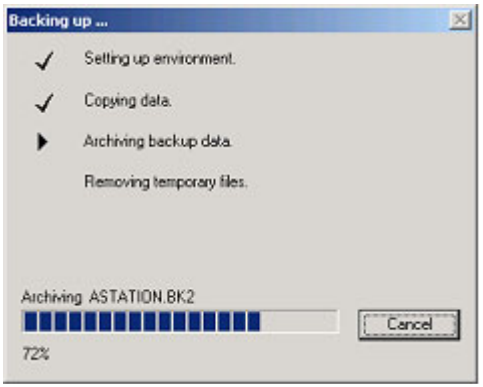


b. For all a single site, the **Backup temporary disk space** window opens (see Figure 115 on page 292). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 7 b.

c. For all a single system, the **Backup temporary disk space** window opens (see Figure 115 on page 292). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 7 c.

d. For Full OTM, the **Backing up** window opens (see Figure 118 on page 295). The back up for OTM Full is completed.

Figure 118
Backing up

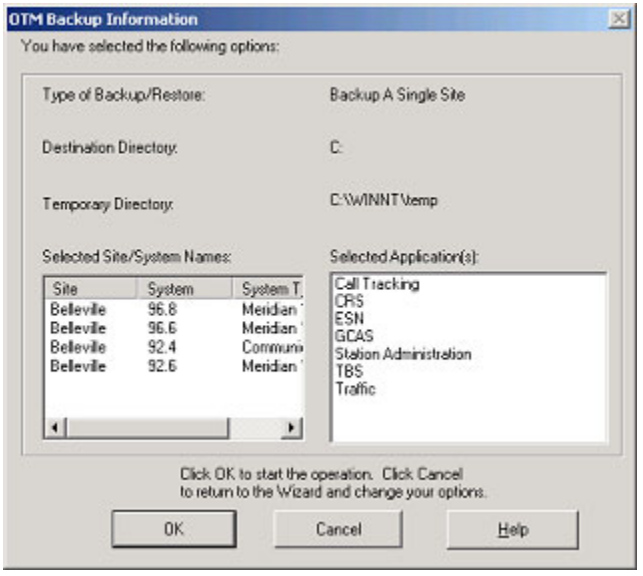


7 Complete one of the following steps:

a. For all sites and all systems, the **Backing up** window opens (see Figure 118). The back up for all sites and all systems is completed.

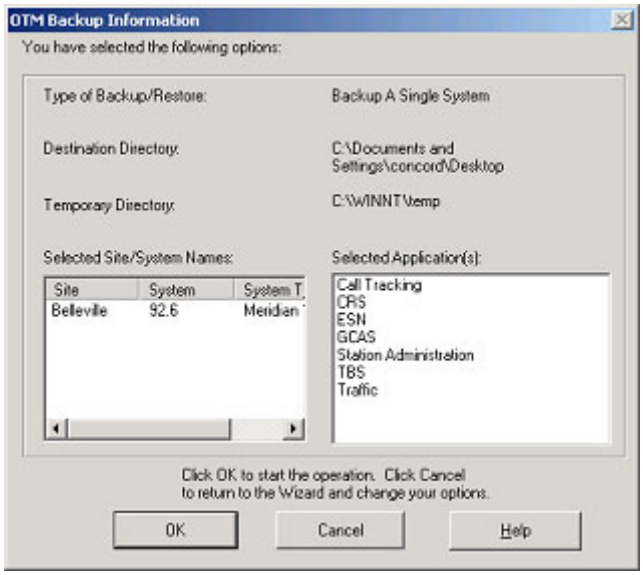
b. For a single site, the **OTM Backup Information** window opens (see Figure 119). Click **OK.** Proceed to step 8.

Figure 119
OTM Backup Information (Single Site)



c. For a single system, the **OTM Backup Information** window opens (see Figure 120). Click **OK.** Proceed to step 8.

Figure 120
OTM Backup Information (Single System)



8 For a single site or a single system , the **Backing up** window opens (see Figure 118 on page 295). The back up for a single site or a single system is completed.

End of Procedure

Restoring a Communication Server 1000 system

There are two different scenarios for restoring a Communication Server 1000 system:

- Replace - Deletes the existing Call Server and its Media Gateways, and creates a new system from the backup file
- Clone - Creates a new Call Server and its Media Gateways from the backup file

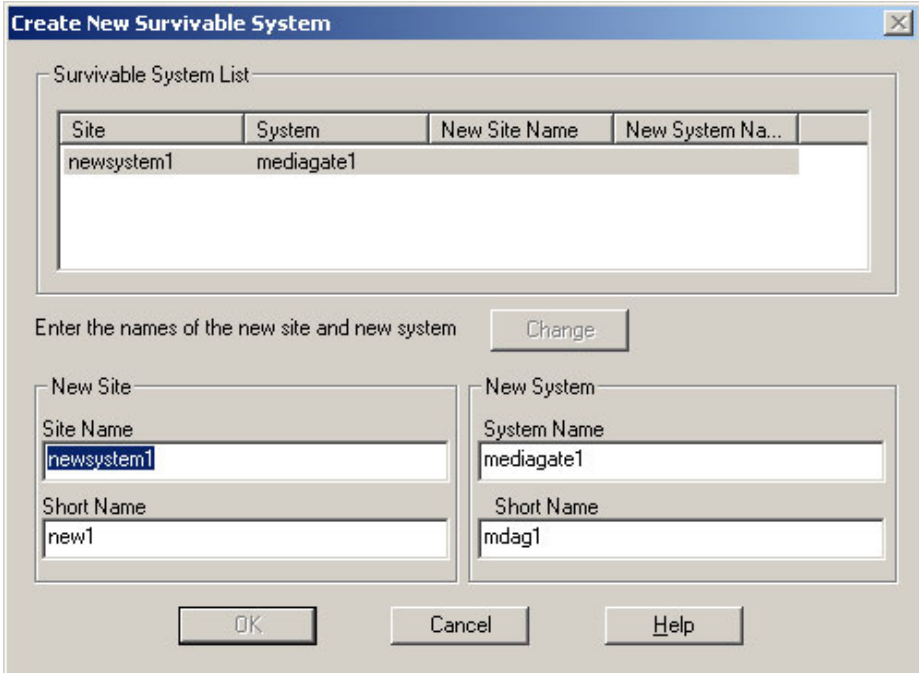
The backup file may contain a different list of Media Gateways than the system you are replacing. Also, the Media Gateways in the backup file may now belong to a different Call Server. For these reasons, before creating a Media Gateway from the backup, a check is made using the site-system name to determine whether or not the Media Gateway already exists. If OTM finds that the Media Gateway already exists, the OTM Restore Wizard dialog box opens Figure 121 on page 297.

Figure 121
OTM Restore Wizard dialog box

OTM Restore Wizard
The main office types for source branch media gateway and the selected branch media gateway do not match. Please select a branch media gateway with the same main office type.
OK

Click **Yes**. The Create New Survivable System dialog box (Figure 122) opens, and you are prompted to enter a new site-system name for the Media Gateway that is in the backup file.

Figure 122
Create New Survivable System dialog box



If the gatekeeper zone for the Communication Server 1000 system does not exist, OTM creates it.

Table 21 shows an example of the changes that occur when you restore a Communication Server 1000 system using the replace scenario.

Table 21
Using the restore utility to replace a Communication Server 1000 system

Backup file	Existing	Result
CSa_BK	CSa	CSa_BK
MGa_BK	MGa	MGa_BK
MGb_BK	MGc	MGb_BKnewName
	CSb	CSb
	MGb	MGb

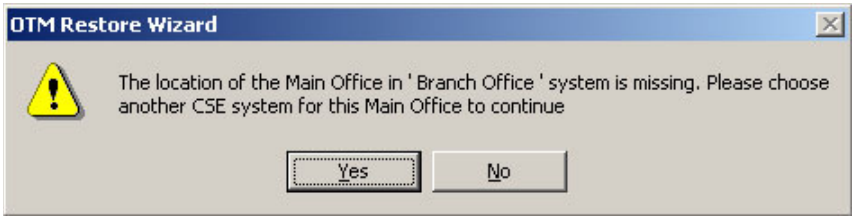
In this example, MGc no longer exists since it was not in the backup file. There is no change made to MGb, which is currently associated with CSb. Since MGb is now associated with CSb, MGb_BK is restored with a new site-system name as MGb_BKnewName.

Restoring an MG 1000B

When you restore a single CS 1000 system, its Media Gateways are restored; however, its MG 1000Bs are not.

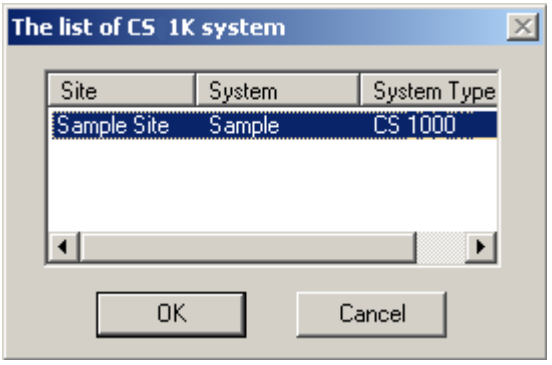
Although an MG 1000B is linked to a Call Server, it is restored up like a separate system. When you restore a MG 1000B from either a Full OTM backup or a single MG 1000B backup, the relationship between the MG 1000B and its associated system is recognized. If the system has been deleted, the OTM Restore Wizard dialog box opens (Figure 123).

Figure 123
Restore MG 1000B dialog box


OTM Restore Wizard
The location of the Main Office in ' Branch Office ' system is missing. Please choose another CSE system for this Main Office to continue
Yes
No

Click **Yes**. The list of CS 1000 systems opens (see Figure 124 on page 299).

Figure 124
List of available Communication Server 1000 systems

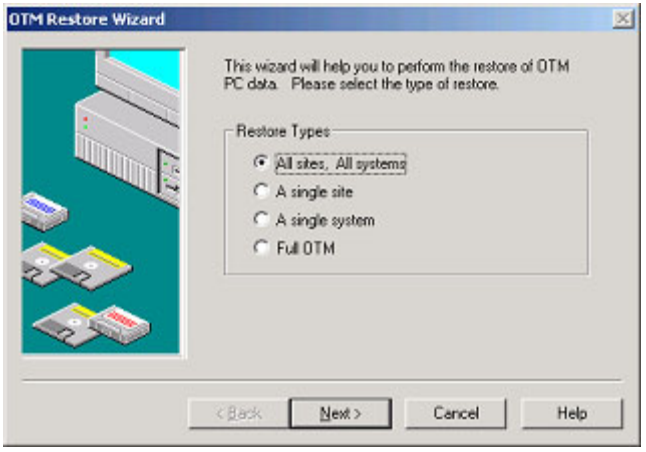


Performing a Restore of OTM

Procedure 55
Restoring OTM data and applications

1 In OTM Windows Navigator, select **Utilities > Restore.** The **OTM Restore Wizard** window opens (see Figure 125).

Figure 125
OTM Restore


OTM Restore Wizard
This wizard will help you to perform the restore of OTM PC data. Please select the type of restore.
Restore Types
All sites, All systems
A single site
A single system
Full OTM
< Back
Next >
Cancel
Help

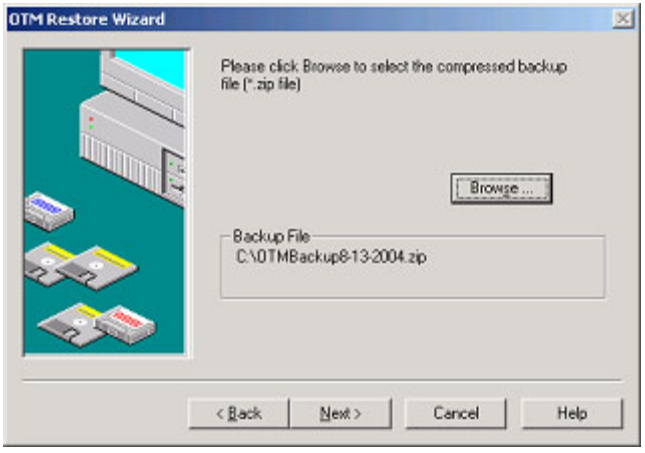
2 Select one of the following restore types and click **Next**:

- **All sites, All systems**
- **A single site**
- **A single system**
- **Full OTM**

3 The **OTM Restore directory selection** window opens (see Figure 126). Click **Browse** to select the compressed backup file directory to store the backup file and click **Next.** Proceed to one of the following steps:

- For **All sites, All systems,** proceed to step 4 a
- For **A single site,** proceed to step 4b
- For **A single system,** proceed to step 4 c
- For **Full OTM,** proceed to step 4 d

Figure 126
OTM Restore directory selection

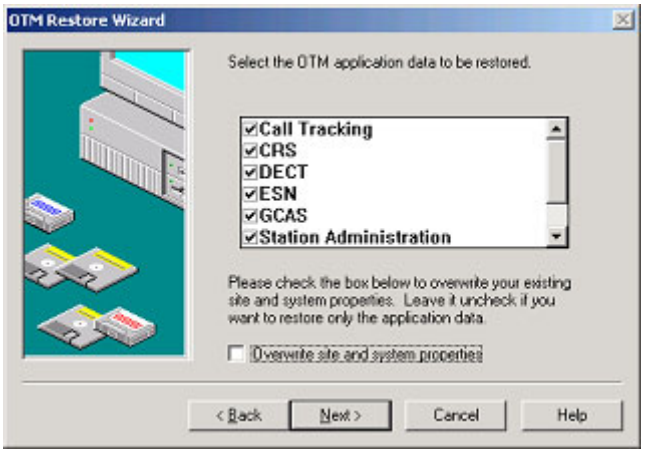


4 Complete one of the following:

a. For all sites, all systems, the **Restore application data** window opens (see Figure 127 on page 301)**.** Select the application data to be restored. Check the **Overwrite site and system properties** check box to over write existing data.

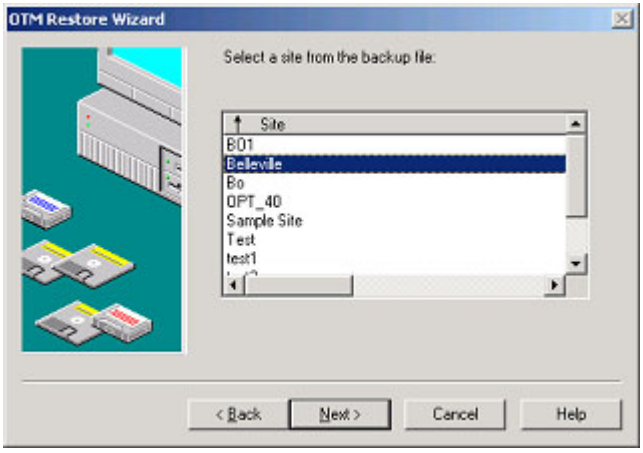
Do not check if you are only restoring the system data. Click **Next.** Proceed to step 5 a.

Figure 127
Restore application data


OTM Restore Wizard
Select the OTM application data to be restored.
Call Tracking
CRS
DECT
ESN
GCAS
Station Administration
Please check the box below to overwrite your existing site and system properties. Leave it uncheck if you want to restore only the application data.
Overwrite site and system properties
< Back
Next >
Cancel
Help

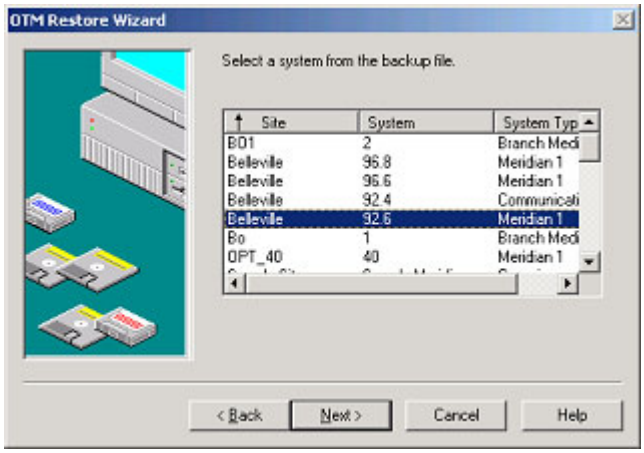
b. For a single site, the **Restore site selection** window opens (see Figure 128). Select a site and click **Next**. Proceed to step 5 b.

Figure 128
Restore site selection



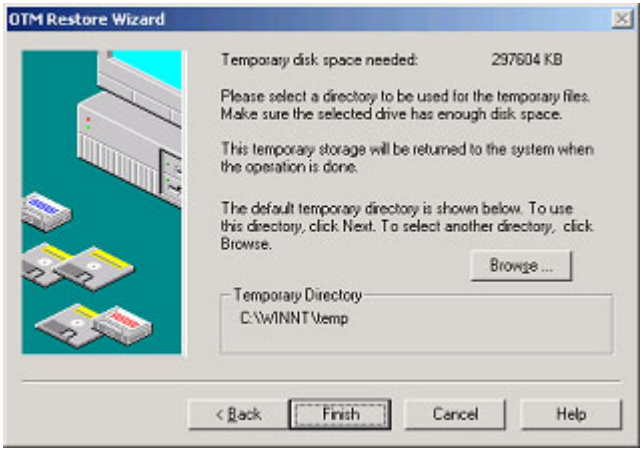
c. For a single system, the **Restore system selection** window opens (see Figure 129). Select a site and click **Next**. Proceed to step 5 c.

Figure 129
Restore system selection (Backup File)



d. For OTM Full, the **Restore temporary disk space** window **o**pens (see Figure 130). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 5 d.

Figure 130
Restore temporary disk space

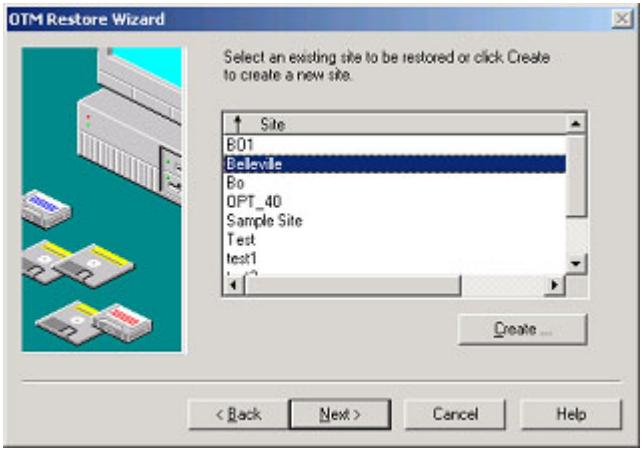

OTM Restore Wizard
Temporary disk space needed: 297604 KB
Please select a directory to be used for the temporary files. Make sure the selected drive has enough disk space.
This temporary storage will be returned to the system when the operation is done.
The default temporary directory is shown below. To use this directory, click Next. To select another directory, click Browse.
Browse ...
Temporary Directory
C:\WINNT\temp
< Back
Finish
Cancel
Help

5 Complete one of the following:

a. For all sites, all systems, the **Restore temporary disk space** window **o**pens (see Figure 130 on page 302). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 6 a.

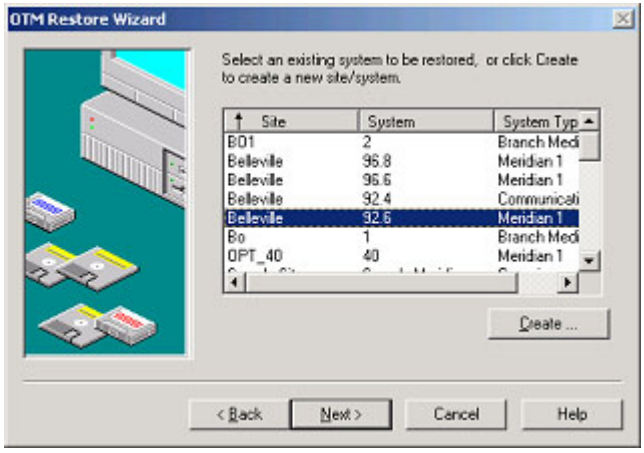
b. For a single site, the **Restore site selection** window opens (see Figure 131). Select a site to restore and click **Next**. Proceed to step 6 b. Click **Create** to create a new site.

Figure 131
Restore site selection



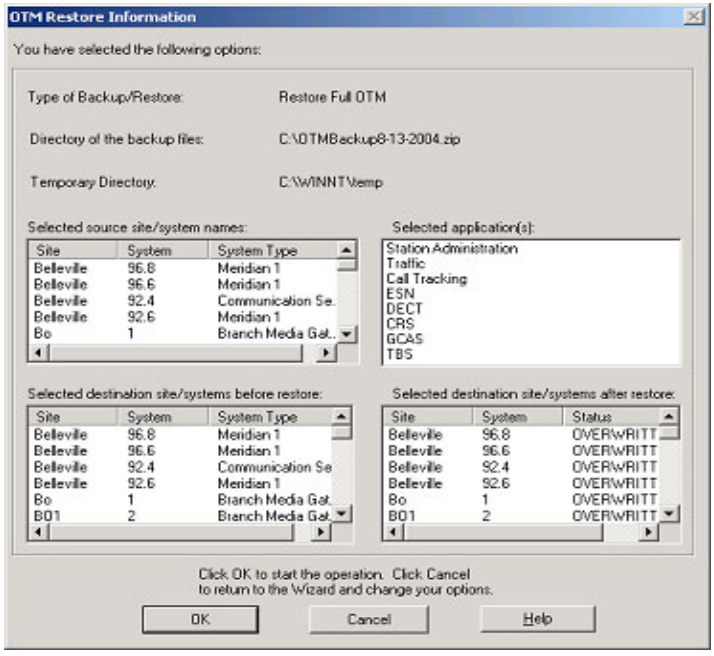
c. For a single system, the **Restore system selection** window opens (see Figure 132 on page 304). Select a system to restore, click **Next** and proceed to step 6 c. Click **Create** to create a new system.

Figure 132
Restore system selection



d. For Full OTM, the **OTM Restore Information** window **o**pens (see Figure 133). Click **OK** to start restore. Proceed to step 6 d.

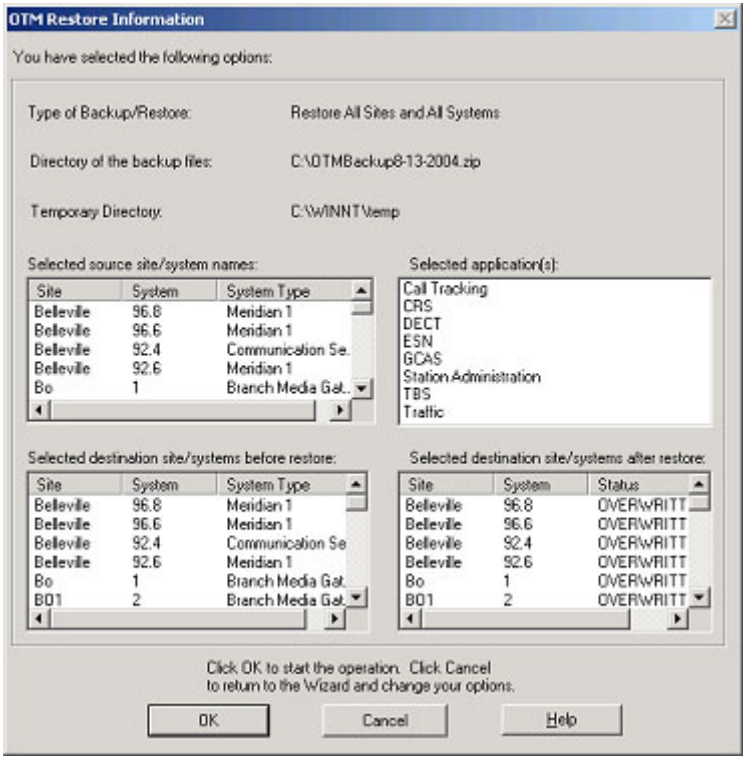
Figure 133
Restore Information (OTM Full)



6 Complete one of the following steps:

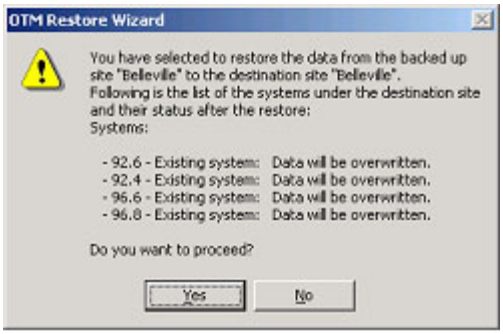
a. For all sites, all systems, the **OTM Restore Information** window **o**pens (see Figure 134). Click **OK** to start restore. Proceed to step 7.

Figure 134
Restore Information (All Sites/All Systems))



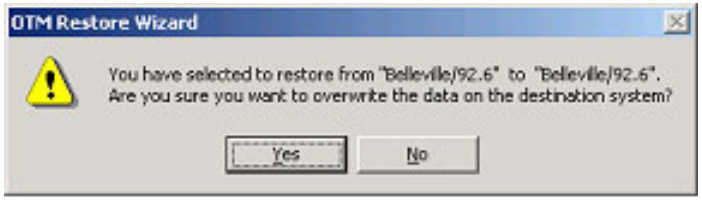
b. For a single site, the **Restore Warning** window opens (see Figure 135 on page 306) asking, “Do you want to proceed?”. This window warns that data will be overwritten. Click **Yes** and proceed to step 7 b. Click **No** to stop the restore.

Figure 135
Restore Warning (Single Site))


OTM Restore Wizard
You have selected to restore the data from the backed up site "Belleville" to the destination site "Belleville".
Following is the list of the systems under the destination site and their status after the restore:
Systems:
- 92.6 - Existing system: Data will be overwritten.
- 92.4 - Existing system: Data will be overwritten.
- 96.6 - Existing system: Data will be overwritten.
- 96.8 - Existing system: Data will be overwritten.
Do you want to proceed?
Yes
No

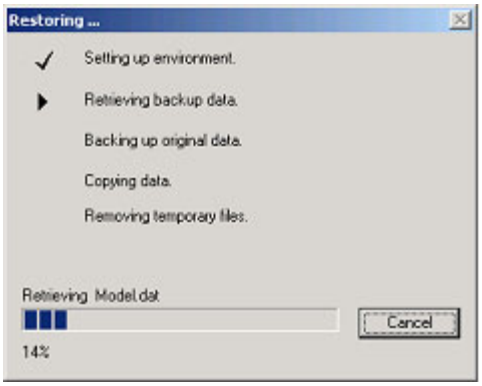
c. For a single system, the **Restore Warning** window opens (see Figure 136) asking, “Are you sure you want to overwrite the data on the destination system?”. Click **Yes** and proceed to step 7 c. Click **No** to stop the restore.

Figure 136
Restore Warning (Single System))


OTM Restore Wizard
You have selected to restore from "Belleville/92.6" to "Belleville/92.6".
Are you sure you want to overwrite the data on the destination system?
Yes
No

d. For Full OTM, the **Restoring** window opens (see Figure 137). The restore for Full OTM is complete. Click **Cancel** to stop the restoring.

Figure 137
Restoring



7 Complete one of the following steps:

a. For all sites, all systems, the **Restoring** window opens (see Figure 137). The restore for all sites, all systems is complete or click **Cancel** to stop the restoring.

b. For a single site, the **Restore application data** window opens (see Figure 127 on page 301)**.** Select the application data to be restored. Check the **Overwrite site and system properties** check box to over write existing data. Do not check if you are only restoring the system data. Click **Next.** Proceed to step 8 a.

c. For a single system, the **Restore application data** window opens (see Figure 127 on page 301)**.** Select the application data to be restored. Check the **Overwrite site and system properties** check box to over write existing data. Do not check if you are only restoring the system data. Click **Next.** Proceed to step 8 b.

8 Complete one of the following steps:

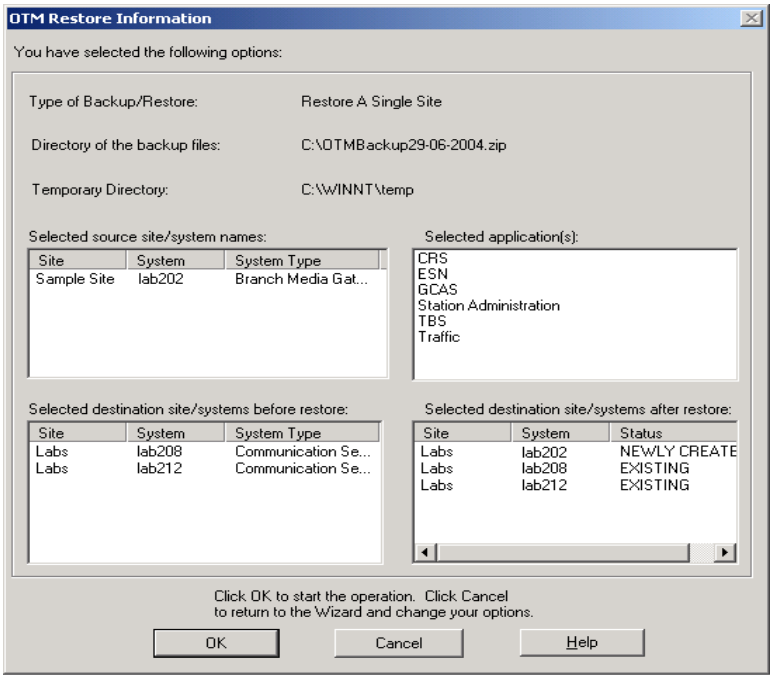
a. For a single site, the **Restore temporary disk space** window **o**pens (see Figure 130 on page 302). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 9 a.

b. For a single system, the **Restore temporary disk space** window **o**pens (see Figure 130 on page 302). Click **Finish** to select the default settings or use the **Browse** button to select another directory. Proceed to step 9 b.

9 Complete one of the following steps:

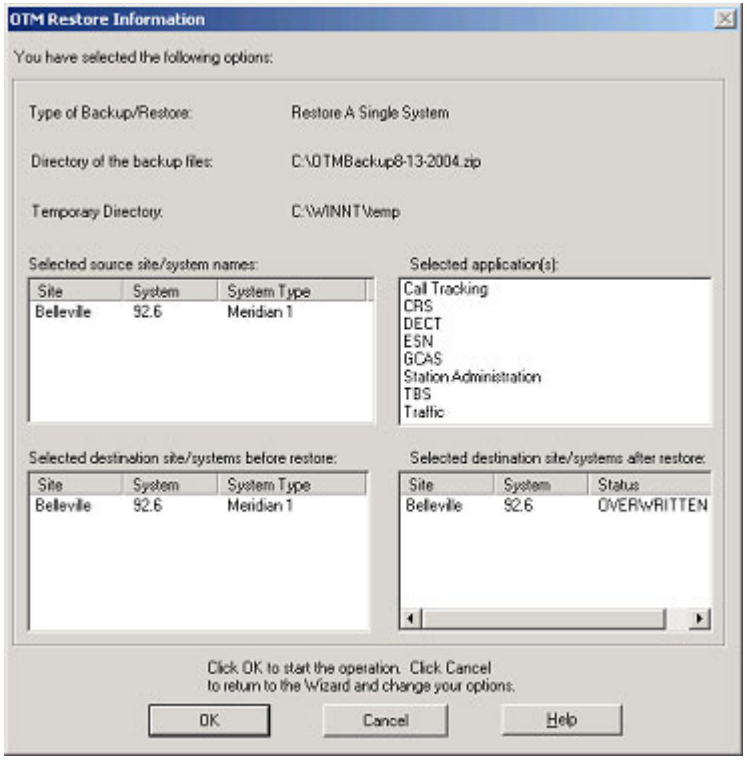
a. For a single site, the **OTM Restore Information** window opens (see Figure 138). Click **OK** to start restore. Proceed to step 10.

Figure 138
OTM Restore Information (Single Site)



b. For a single system, the **OTM Restore Information** window opens (see Figure 139 on page 309). Click **OK** to start restore. Proceed to step 10.

Figure 139
OTM Restore Information (Single System)



10 For a single site or a single system, the **Restoring** window opens (see Figure 137 on page 307). The restore for a single site or a single system is complete or click **Cancel** to stop the restoring.

End of Procedure

LDAP synchronization

Lightweight Directory Access Protocol (LDAP) server refers to an external corporate directory that is LDAP- compliant. This utility synchronizes data between a directory and client databases. Intended audience

To use LDAP Synchronization, you must be knowledgeable about directory server configuration and maintenance, LDAP attribute customization, and how to work with LDAP-enabled applications. Information related to these topics is beyond the scope of this document.

Supported LDAP servers

OTM supports LDAP version 3 and synchronization with the following LDAP servers:

- Netscape Directory 3.0
- Sun ONE Directory 5.0 and 5.2
- Exchange Server 5.5 and 2000
- Novell NDS 7.09 and eDirectory 8.7
- Active Directory 1.0 and Active Directory for Windows 2000

Operating guidelines

Each type of LDAP server supported by OTM has specific constraints regarding the maximum number of characters that you are allowed to enter for a given attribute. Synchronization and update operations may fail if these limitations are not taken into consideration when entering data in the OTM directory.

LDAP Synchronization is enabled for OTM Directory entries that are in the Published status. See “Access the Employee Editor” on page 167. Only entries in the LDAP-compliant external corporate directory that have matching unique identifiers (UIDs) in the OTM Directory are synchronized. You can manually enter the UIDs in the OTM Directory entries or import them using the procedure outlined in “Import and Export” on page 273.

Setting up LDAP synchronization

The user must be able to enter the DN of a valid entry in the directory with the appropriate rights.

Procedure 56
Setting up LDAP synchronization

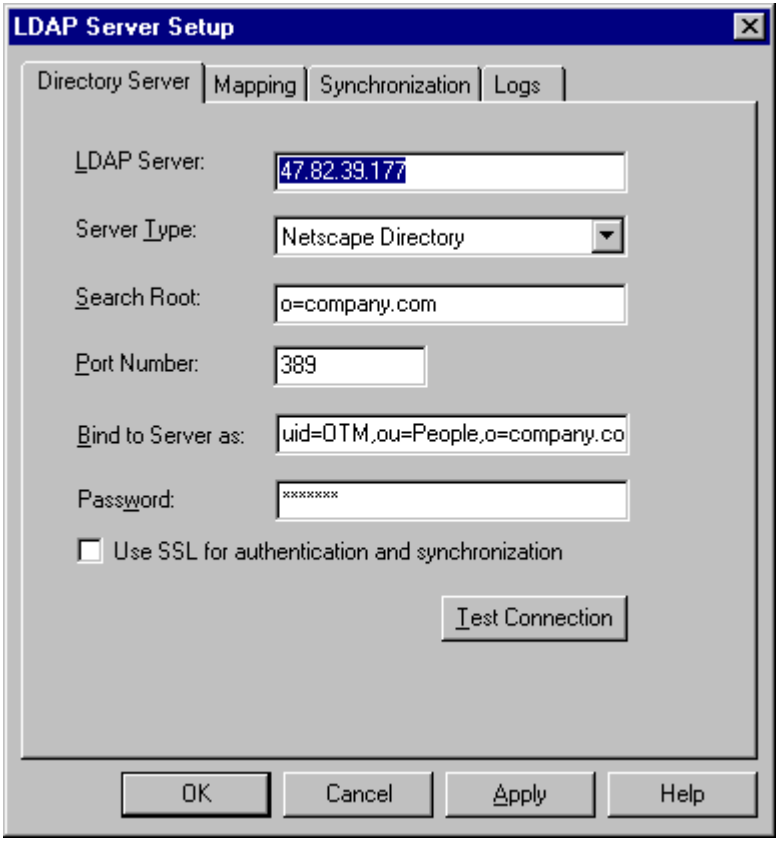
1 Before accessing the LDAP Server Setup, obtain the following information:

- Address of the LDAP server
- Server type
- Port Number
- Search Root (The Search Root is the Distinguished Name of the entry that serves as the starting point for the search for the LDAP Server. Ask your LDAP server administrator for the correct search root to synchronize with the OTM server).
- Bind to Server as ("Bind to Server as" defines the Distinguished Name [DN]) that the OTM directory uses for authentication when OTM follows the bind rules to connect to the LDAP Server).
- Password

2 Access the LDAP Server Setup dialog box: from the Navigator menu bar, choose **Utility > LDAP Setup** and Logs in the OTM Navigator window

The LDAP Server Setup dialog box opens with the Directory Server tab displayed (Figure 140).

Figure 140
LDAP Server Setup—Directory Server tab



Directory Server tab

The Directory Server tab (Figure 140) defines the LDAP Server.

To define the LDAP Server

3 Enter the following information obtained in step 1.

- **LDAP Server:** Enter the IP address or domain name of the LDAP server.
- **Server Type:** Select the server type from the drop-down list.
- **Search Root:** Enter the search root for the LDAP server.
- **Port Number**:If necessary, change the port number for LDAP server communication.

Note: Typically, the default port number for SSL LDAP synchronization is port 636. The default port number for non-SSL LDAP synchronization is port 389.

- **Bind to Server as**: Enter a Distinguished Name (user ID).
- **Password**: Enter the password that corresponds to the OTM user ID in the "Bind to Server as" field.

4 Select the **Use SSL for authentication and synchronization** check box to request that OTM initialize a secured connection to the LDAP server.

5 Click **Test Connection** to verify the settings. The Test Connections button tests whether the server responds and verifies the LDAP Server IP address and port number only.

IMPORTANT!

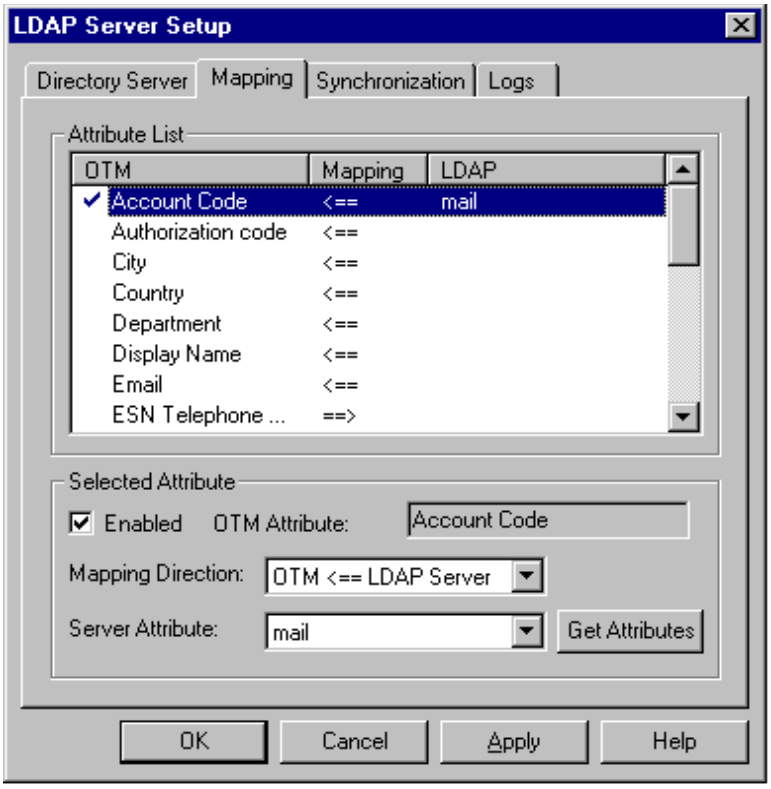
You must click **Apply** to apply any changes made in the Directory Server tab before selecting another tab.

6 Click the **Mapping** tab. The Mapping page displays.

Mapping tab

The Mapping tab (Figure 141) identifies how the data between the OTM Directory and the LDAP Server is synchronized.

Figure 141
LDAP Server Setup—Mapping tab



Note: On a new OTM installation, the OTM display name field is not visible in the Attribute List. The OTM display name is added to the OTM directory after synchronization with the system. Perform LDAP synchronization after synchronization with the system.

Only elements that are enabled through the check box are synchronized during the scheduled synchronization periods.

To enable the Mapping of a data item

7 Select an OTM data element from the **Attribute List**. The **OTM Attribute** box populates with the selected item.

8 Select the mapping direction from the **Mapping Direction** drop-down list

9 Select the associated **Server Attribute** in the LDAP Server. See "OTM fields and LDAP attributes" on page 320 for more information.

10 Ensure the **Enabled** checkbox is selected.

11 Click the Synchronization tab

To refresh the displayed attributes on the Server Attribute drop-down menu, highlight an item from the Attribute List and then click **Get Attributes**..

Synchronization tab

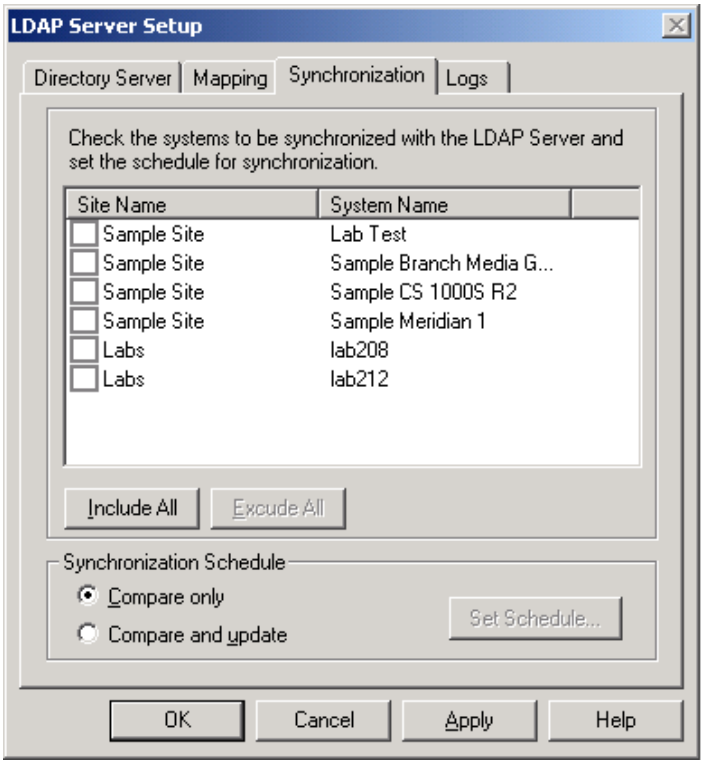
The Synchronization tab (Figure 142 on page 316) lists all systems defined in the OTM Navigator.

It is not necessary to schedule a separate synchronization for each site or system. Nortel recommends that you add newly introduced systems to an existing synchronization task.

Scheduled synchronization synchronizes only OTM Directory entries for which the attribute has been enabled. Synchronization also only compares or updates entries that have the same UID between OTM Directory and the LDAP Server. A UID can be manually set up using the LDAP Synchronization Utility (see "LDAP Synchronization Utility" on page 318), or by using the Import / Export capability (see "Importing LDAP ID (UID) Using an Entity's Extension Number (DN)" on page 326).

If an LDAP synchronization is in the queue and scheduled for a system or systems change, change the selection of the systems to be synchronized in the currently scheduled job rather than scheduling a second synchronization. When the synchronization is run at the scheduled time, it will pick up the latest selection.

Figure 142
LDAP Server Setup—Synchronization tab



To schedule the synchronization between the OTM directories and the LDAP Server:

12 Select the systems to be synchronized

- Click **Include All** to select all systems listed. Only selected systems are considered for synchronization.
- Click **Exclude All** to

13 Set the synchronization schedule by selecting one of the following:

- **Compare only**: When you select this option, the synchronization task does not perform the synchronization. It generates a report based on the results of the comparison.
- **Compare and update**: When you select this option, the synchronization task performs the synchronization.

14 Click **Set Schedule** to open the Scheduler and set the schedule for the synchronization task. See "Scheduler" on page 269.

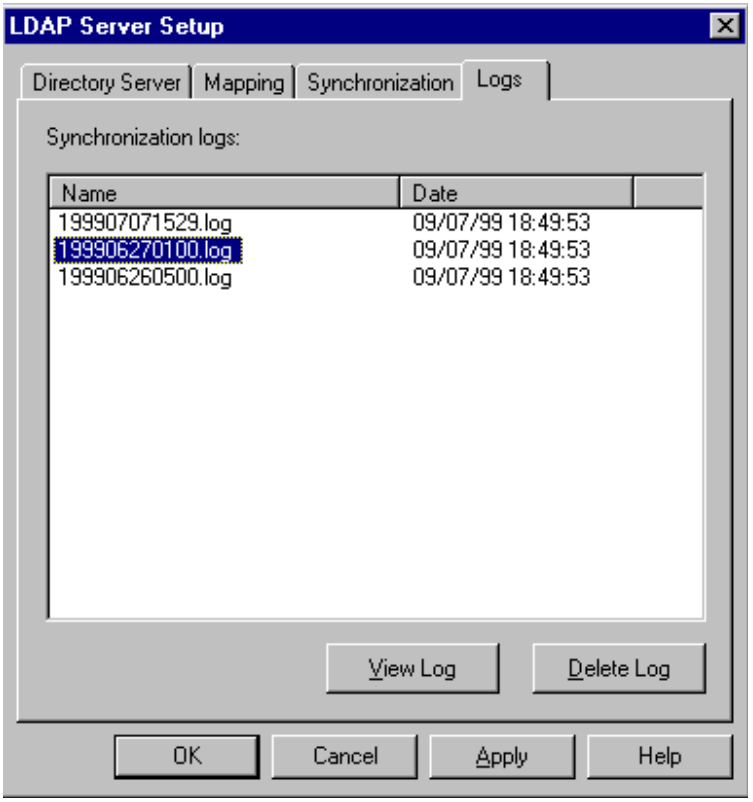
End of Procedure

Logs tab

A background routine performs synchronization at the scheduled time, and stores the results in a log in an OTM directory. The Logs tab (Figure 143) displays the log files.

- Click **View Log** to open a file for viewing.
- Click **Delete Log** to delete a file.

Figure 143
LDAP Server Setup—Logs tab



Synchronization results can also be viewed from the web. See "Sync Tasks and Logs page" on page 835.

LDAP Synchronization Utility

Use the LDAP Synchronization window (see Figure 144 on page 319) to manually synchronize data between the LDAP Server and an OTM directory.

- The LDAP Synchronization window does not provide a report of success or failure in synchronizing data.
- During the synchronization process, you are not provided with an indication of progress. To estimate the time required for the synchronization process, check the start and end times for past synchronizations in the PC Event list.

To start the utility, double-click on the LDAP Synchronization icon in the System Window. The LDAP Synchronization window (see Figure 144 on page 319) opens.

Before you can find, add, link, or edit an entry in LDAP, you must establish

IMPORTANT!

LDAP Synchronization supports a maximum string length of 512 for Distinguished Name. An error message is displayed if the DN exceeds this length.

communication with the LDAP directory server. Use the OTM Windows Navigator to set up communication between OTM and the LDAP server. Choose menu Utilities – LDAP Setup & Logs.

Find an entry

Procedure 57
Finding an entry

1 Choose either Name, First Name, Last Name, or UID in the drop-down list.

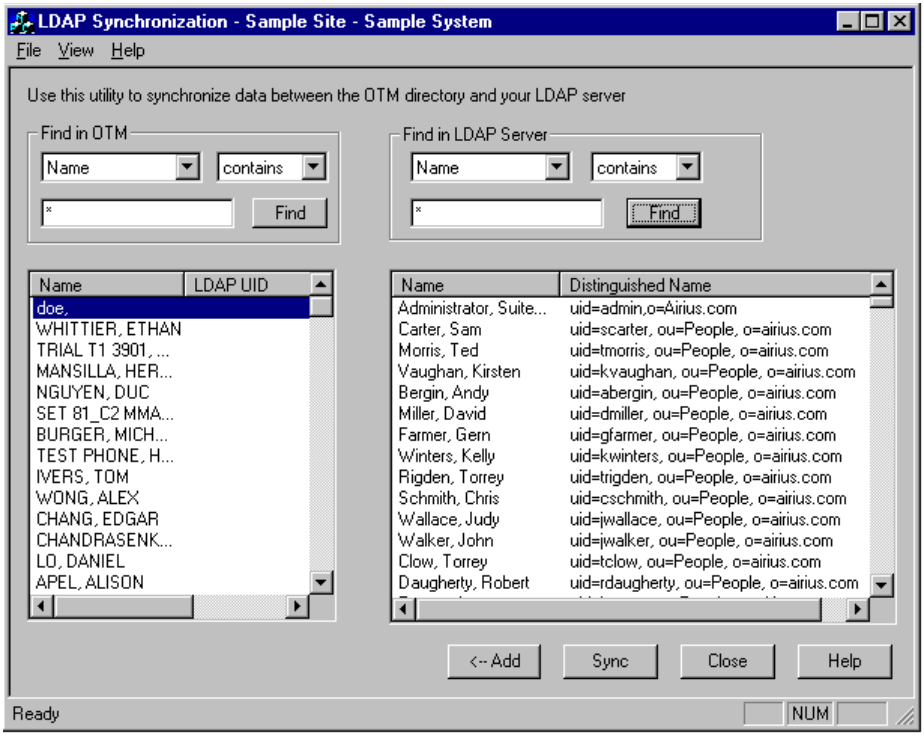
Note: The “contains” field has no other options. It is reserved for future development.

2 In the text field next to the Find button, enter all or part of the Name/UID that you want to find.

3 Click **Find**. All entries that contain the text string appear in the list below the Find controls.

Perform manual synchronization when a new employee is added in the LDAP Server and you want to add the employee data into the appropriate OTM directory.

Figure 144
LDAP Synchronization window



End of Procedure

Add an entry

Procedure 58
Adding an entry from the LDAP directory to the OTM directory

1 In the **Find in LDAP server** section, find the entry you want to add.

2 Select the entry and click **Add**. OTM checks the entry to make sure it is valid. If the entry is valid, OTM adds the entry to the OTM directory.

To delete a record that you may have added to the OTM Directory in error, you must use OTM Directory Services. See "Delete employees" on page 164 for more information.

End of Procedure

Link an entry

Procedure 59
Linking an entry between the LDAP directory to the OTM directory

1. In the “Find in OTM” section, find the entry you want to link.
2. In the “Find in LDAP server” section, find the entry you want to link.
3. Select each entry so both entries are highlighted.
4. Click Sync. OTM checks each entry to make sure it is valid. If the entry is valid, OTM links the entry between the LDAP directory and the OTM directory.

End of Procedure

Edit an entry

OTM controls some attributes, while the LDAP server controls others. Change only those attributes that OTM controls.

Procedure 60
Editing an entry in the OTM directory

1. In the “Find in OTM” section, find the entry you want to edit.
2. Double-click the entry. The Employee Editor opens, with the selected entry highlighted.

End of Procedure

OTM fields and LDAP attributes

LDAP attributes are mapped to OTM fields during synchronization (or manually by clicking **Sync**, or at a scheduled time). The fields are mapped according to the configuration set in the Mapping table (see Figure 141 on page 314).

When you click **Add** in the LDAP Synchronization dialog box, the LDAP attributes are copied to the corresponding OTM fields.

Only the fields that are mapped from LDAP to OTM are copied when you click **Add**.

CAUTION — Service Interruption
UID, Last Name, and First Name must be mapped. You receive a warning message when you exit the Mapping tab if they are not mapped.

Table 22 provides the recommended mapping between LDAP Directory attributes and OTM Directory attributes. Table 23 on page 324 provides information on where the OTM Directory accesses the information for the attribute. .

IMPORTANT!

If mapping uid in OTM to a field other than the recommended LDAP field (for example, cn or uid), the field must be indexed and of the same data type to achieve optimal performance.

As shown in Table 23 on page 324, most of this information is input through the Employee Editor.

Table 22
LDAP recommended mapping (Part 1 of 3)

OTM Directory attribute	Allowed mapping direction	LDAP Directory attribute	Comment/Field Type
Unique Identifier (uid - new directory cross-referenced field)	LDAP==> OTM	uid, or cn (Active Directory)	“uid” or “cn” must be entered in the OTM Directory before the synchronization routine can synchronize the entry with LDAP.
Identification (UsrID)	both	employeeNumber, or employeeID (Active Directory)	Regular Field
Last Name (EmpLName)	both	sn	Regular Field
First Name (EmpFName)	both	givenName	Regular Field
Middle Name (EmpMName)	both	Initials	Not mapped by default.
Department (derived)	both	departmentnumber (Netscape, Active Directory), department (Exchange), or orgnaizationalUnitName (Novell)	Department is the end “node” of the organization path in the OTM Directory.
Email (Email)	both	mail	Regular Field
Manager (ManagedBy)	both	manager (Netscape, Novell)	Regular Field
	<==	manager (Exchange, Active Directory)	Regular Field
Job Title (JobTitle)	both	title	Regular Field

Table 22
LDAP recommended mapping (Part 2 of 3)

OTM Directory attribute	Allowed mapping direction	LDAP Directory attribute	Comment/Field Type
Station Location (derived: site-system-cross reference field)	==>	otmFullPhoneID	Must be present if telephone attributes (extension number, external telephone number, Terminal Number and so on) are mapped. Telephone Location consists of a “Site-System- PhoneID” string formed from the OTM site and system and the location configured in Station Administration. This allows you to uniquely identify a telephone. This is not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.
Display Name (NameDisplay) (new cross referenced field)	both	otmTelephoneNameDisplay	This is not a regular field in LDAP. This field contains the display name (CPND) for the DNs belonging to the user. If desired, define as a new field in LDAP for OTM.
Extension (cross referenced field)	both	otmTelephoneNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.
External Telephone Number (ExternaltelephoneNumber [derived])	==>	otmExternalTelephoneNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.

Table 22
LDAP recommended mapping (Part 3 of 3)

OTM Directory attribute	Allowed mapping direction	LDAP Directory attribute	Comment/Field Type
ESN Telephone Number (ESNtelephoneNumber (derived))	==>	otmESNtelephoneNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.
Terminal Number (TelephoneTerminalNumber (derived))	==>	otmTelephoneTerminalNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM.
Account Code (cross referenced field)	OTM==> LDAP	otmTelephoneAccountCode	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM.
Authorization Code (cross referenced field)	OTM==> LDAP	otmTelephoneAuthCode	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM.
Street/No (address)	both	postalAdress	Typical direction LDAP to OTM
City (City)	both	l	Typical direction LDAP to OTM
Prov/State (Prov/State)	both	st	Typical direction LDAP to OTM
Country (Country)	both	co	Typical direction LDAP to OTM
Postal/Zip (Postal)	both	postalCode	Typical direction LDAP to OTM

Table 23
Sources for OTM Directory attributes (Part 1 of 2)

OTM Directory attribute	OTM accesses information from:	LDAP Directory attribute
Unique Identifier (uid - new directory cross referenced field)	Employee Editor - 'Unique Identifier' field	uid, or cn (Active Directory)
Identification (UsrID)	Employee Editor - 'Identification' field	employeeNumber, or employeeID (Active Directory)
Last Name (EmpLName)	Employee Editor - 'Last Name' field	sn
First Name (EmpFName)	Employee Editor - 'First Name' field	givenName
Middle Name (EmpMName)	Employee Editor - 'Middle Name' field	Initials
Department (derived)	Employee Editor - Org > Division > 'Department' field	departmentnumber (Netscape, Active Directory), department (Exchange), or organizationalUnitName (Novell)
Email (Email)	Employee Editor - 'Email' field	mail
Manager (ManagedBy)	Employee Editor - 'Manager' field	manager
Job Title (JobTitle)	Employee Editor - 'Job Title' field	title
Station Location (derived: site-system-cross reference field)	Of the form: Site Name-System Name-Location	otmFullPhoneID
Display Name (NameDisplay) (new cross referenced field)	Employee Editor - 'Display Name' attribute in the Additional Info tab	otmTelephoneNameDisplay
Extension (cross referenced field)	Employee Editor - 'Extension' asset	otmTelephoneNumber

Table 23
Sources for OTM Directory attributes (Part 2 of 2)

OTM Directory attribute	OTM accesses information from:	LDAP Directory attribute
External Telephone Number (ExternaltelephoneNumber (derived)	System Properties > Customer Properties: If DID is enabled in the Numbering Plans tab, the External Telephone Number = Exchange + DN. Exchange is taken from the Numbering Plans tab. If DID is disabled in the Numbering Plans tab, the External Telephone Number = Number entered in the Directory Numbers field in the General tab.	otmExternalTelephoneNumber
ESN Telephone Number (ESNtelephoneNumber (derived))	System Properties > Customer Properties: Of the form: HLOC + DN. HLOC is taken from the 'HLOC' field in the General tab.	otmESNtelephoneNumber
Terminal Number (TelephoneTerminalNumber (derived))	Employee Editor - 'Terminal Number' asset	otmTelephoneTerminalNumber
Account Code (cross referenced field)	Employee Editor - 'Account Code' asset	otmTelephoneAccountCode
Authorization Code (cross referenced field)	Employee Editor - 'Authorization Code' asset	otmTelephoneAuthCode
Street/No (address)	Employee Editor - 'Street/No.' field	postalAdress
City (City)	Employee Editor - 'City' field	l
Prov/State (Prov/State)	Employee Editor - 'Prov./State' field	st
Country (Country)	Employee Editor - 'Country' field	co
Postal/Zip (Postal)	Employee Editor - 'Postal/Zip' field	postalCode

Importing attributes to OTM Directory

Use the Import/Export Utility to import data from external sources to the OTM Directory. The example that follows shows how to import a UID from an LDAP database to a user with an extension number in OTM Directory. You can use the same

method to import a UID using other data, such as Manager's Name, E-Mail Address, and so on.

Importing LDAP ID (UID) Using an Entity's Extension Number (DN)

In the following example, the LDAP ID of a user (Bill President) is imported using his extension number (7000).

The entity should be the prime owner of the extension for this import to be successful.

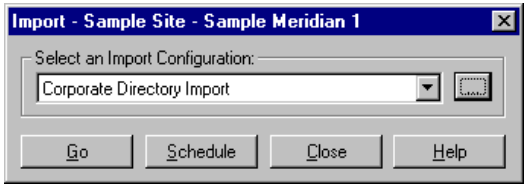
Procedure 61
Importing LDAP ID (UID)

1 Create a text file that maps the extension number of the entity to his or her UID. The first row should state the name of the column: in this case, column 1 is Extension, and column 2 is the UID. More records can be added to the file. In this example, the file is named C:\extuidmap.txt, and contains the following text:

```
"Extension", "UID"
7000, bpresldapid
```

2 Launch the Import utility. This utility can be launched from a number of applications. In this example, the Import dialog box (Figure 145) was opened by selecting File > Import... in the Telecom Billing System (TBS) application.

Figure 145
Import dialog box

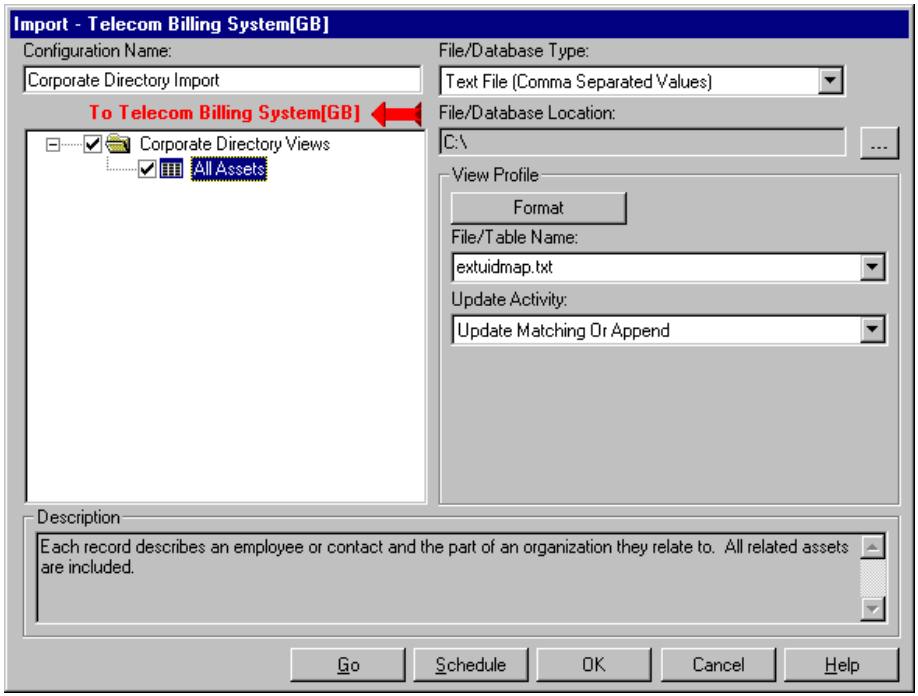


a. Select **Corporate Directory Import** from the drop-down list of Import Configurations.

b. Click the ellipsis button.

The Import - Telecom Billing System(GB) dialog box opens (Figure 146).

Figure 146
Import - Telecom Billing System(GB) dialog box



3 In the Import - Telecom Billing System(GB) dialog box (Figure 146), select **Corporate Directory Views** and select the **All Assets** box.

4 Select **Text File** (Comma Separated Values) from the drop-down list of available File/Database Types.

5 Click the ellipsis button, and select the File/Database Location. In this example, the file created in step 1 is stored in C:\.

6 Use the drop-down list to select the File/Table Name. In this example, the file is called *extuidmap.txt*.

7 Select **Update Matching** from the Update Activity drop-down list. This indicates that only records satisfying the search criteria will be updated.

8 Click **Format** to open the mapping dialog box (Figure 147).

The next steps in the procedure map the extension and UID fields in the corporate directory to the correct columns in the text file.

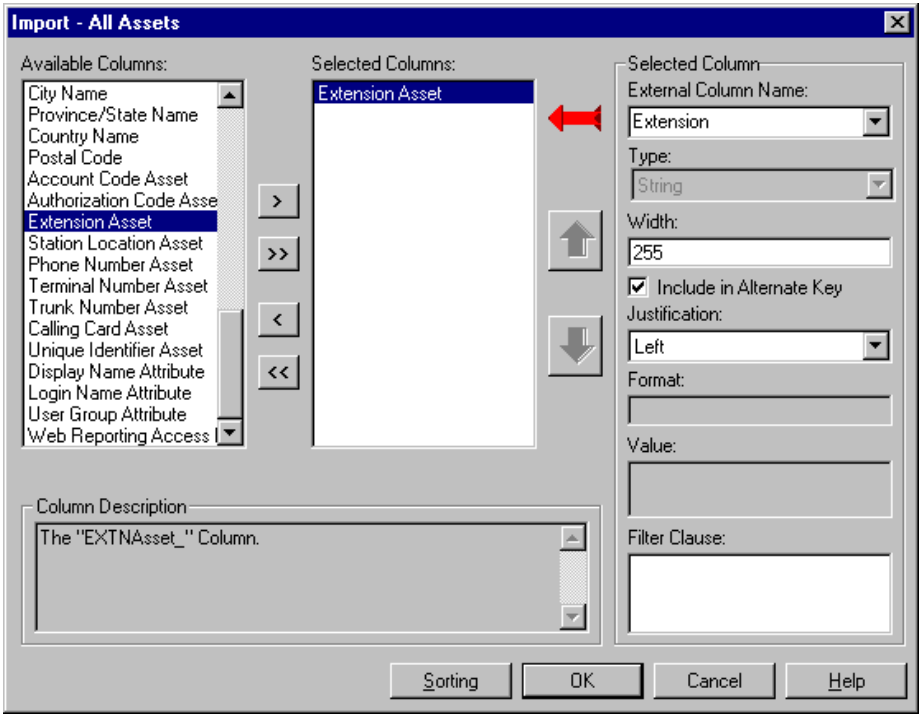
9 Use the left double arrow button to clear the Selected Columns list.

10 Select the Extension Field by clicking the Extension Asset in the Available Columns List, and then clicking the right arrow button. This is the field in the Corporate Directory.

11 To map this field to the column in the text file that was created, select the proper External Column Name. In this example, the first column in the text file was called “Extension”.

12 Select the Include in Alternate Key check box. This indicates that the extension is used as the search criteria. The system adds the LDAP ID to the entity owning this extension (i.e., the Prime Owner).

Figure 147
Mapping extensions and UID field to Corporate Directory

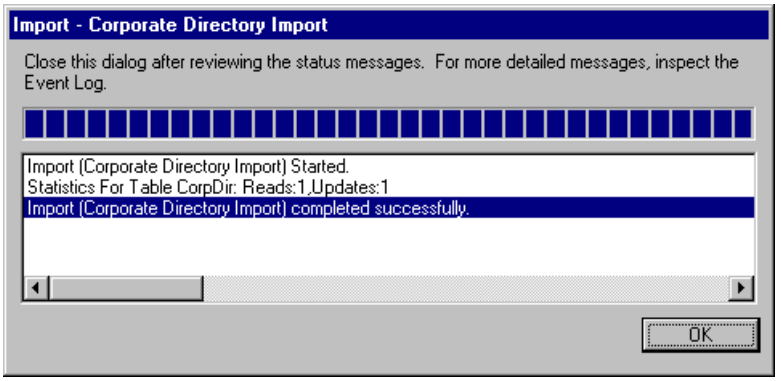


13 Use the same procedure to select the Unique Identifier Asset and map it to the UID External Column Name. Do not select the Include in Alternate Key check box for this field.

14 Click **OK** to close the dialog box, and click **GO** in the configuration dialog box (Figure 145 on page 326) to begin the import process.

When the import is completed, the Corporate Data Import summary dialog box appears (Figure 148).

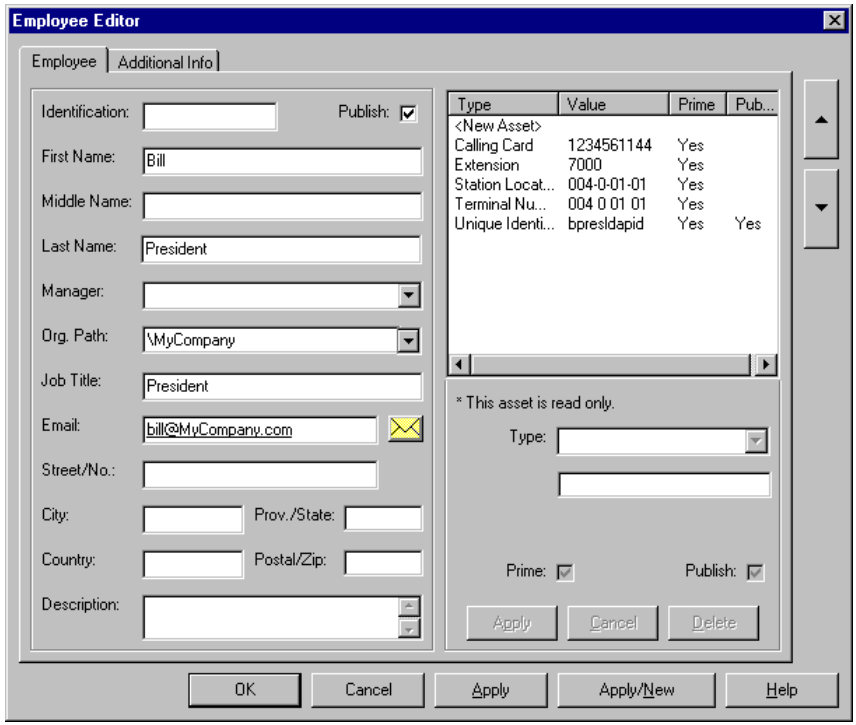
Figure 148
Corporate Directory Import summary


Import - Corporate Directory Import
Close this dialog after reviewing the status messages. For more detailed messages, inspect the Event Log.
Import (Corporate Directory Import) Started.
Statistics For Table CorpDir: Reads:1,Updates:1
Import (Corporate Directory Import) completed successfully.
OK

In this example, the summary indicates that one record was read in and one record was updated.

15 The final step is to verify that the Unique Identifier Asset (LDAP ID) was added into the employee record for Bill President. From Station Administration, choose View > Employee Selector. Double-click the record for Bill President, and verify that the Unique Identifier Asset for this employee (bpresldapid) is listed (Figure 149 on page 330).

Figure 149
Employee Editor dialog box



End of Procedure

LDAP troubleshooting tips

Table 24 provides information that you will find useful if you encounter problems in the integration of OTM with your LDAP server.

Table 24
LDAP troubleshooting tips

Problem	Suggestion(s)
Test connection fails	• Ensure that the IP address or Hostname of the LDAP server is correct. • Ensure that Bind to Server as and Password are correct.
Cannot retrieve data from OTM directory	• Ensure that attributes are mapped and enabled.
Cannot retrieve data from LDAP server	• Ensure that Server Type, Search Root, and Port Number are correct.
Cannot update data in LDAP server	• Ensure that Bind to Server as and Password are correct.
Data is not synchronized	• Ensure that Publish field is selected. • Ensure that data in OTM and LDAP directories have the same UIDs. (Note that UIDs are case sensitive.) • Ensure that fields are mapped correctly and enabled. • Ensure that Mapping Direction is correct. • Ensure that the Compare and Update field is selected. • Check the log file for details.
Log file does not appear in the Logs tab of the LDAP Server Setup dialog box	• The synchronization logs view does not automatically refresh itself. Update the list of files by closing and reopening the LDAP Server Setup dialog box.

Table 25 provides a list of frequently asked questions related to the integration of OTM with your LDAP server.

Table 25
LDAP frequently asked questions (Part 1 of 4)

Question	Answer
How do I verify that the LDAP server information is correct?	Use the Address Book utility in Netscape or the Find People utility in Outlook Express to verify Netscape: 1. Setup LDAP Server: Communicator > Address Book > File > New Directory > Enter LDAP Server details. 2. Perform lookup: Enter search filter in the *Show Name Containing* field and click on the directory name under *Directory* to begin the search. Outlook Express: 1. Setup LDAP Server: Tools > Account > Add > Directory Service > Enter LDAP Server's IP address. 2. Perform lookup: Find > People > Select LDAP Server > Enter Search filter and click the *Find Now* button to begin the search.
Can OTM sync to more that one LDAP server?	No, OTM is designed to sync to only one LDAP server.
What LDAP version does OTM support?	LDAP v3.
What default I/O port does OTM use for LDAP?	The default port is 389. Your corporate LDAP server may use a different port.
What LDAP directory servers does OTM support?	See "Supported LDAP servers" on page 310
How much network bandwidth does LDAP synchronization use?	The maximum network bandwidth required for LDAP synchronization is 720 Kbps per system. Nortel recommends that synchronization be scheduled to occur once each week during off hours.

Table 25
LDAP frequently asked questions (Part 2 of 4)

Question	Answer
Can a third-party server be given direct access the OTM directory?	No, the OTM Server is not LDAP-enabled. OTM provides an LDAP client and a sync agent to synchronize with external LDAP servers. It is not possible to use a third-party LDAP client to connect to the OTM directory as you would a real directory such as Netscape Directory.
How do I add new users to the OTM directory?	There are two methods for adding new users: • Manual add from the LDAP Sync Utility • Bulk add through the Import Utility
What file/database types does OTM support for Import/Export?	• dBase IV • Microsoft Excel (v5 and above) • Microsoft Access • ODBC data source • Text file (comma separated) • Text file (fixed width)
How do I create the OTM directory for a new customer?	1. Export the customer's date using one of the supported Import/Export file/database types. 2. Use the Import Utility to import the data into OTM.
What services/parameters can I change using LDAP Synchronization?	The LDAP Synchronization Utility synchronizes user data between the OTM directory, Station Administration database, and the LDAP compliant directory. No other parameters are currently supported. For a list of the supported parameters, or attributes, see Table 22 on page 321.
What kind of scripts can I develop for use with LDAP Synchronization?	OTM does not support scripting for LDAP Synchronization.
What LDAP standards-based features are supported by OTM?	OTM only supports lookup and synchronization to an LDAP directory using the application tools within OTM.

Table 25
LDAP frequently asked questions (Part 3 of 4)

Question	Answer
How can I perform mass changes in OTM?	The Global Update function within OTM allows you to change common data values across multiple stations. Data import/export can also be used to manage large data transactions.
Can I perform mass changes using LDAP Synchronization?	The function of LDAP Synchronization Utility is to keep data aligned, not to import data. When you perform a lookup on an LDAP server and link a subscriber for synchronization, many of the subscriber's properties are copied to the OTM directory; however, this is done one subscriber at a time. The Import/ Export utility is a better option for bulk import operations.
Does OTM use a proprietary database? If so, can I use ODBC-compliant SQL commands to perform synchronization?	OTM utilizes several databases in its various applications. These databases are not accessible to you except through OTM applications and the Import/Export utility.
How do I use the Import/Export Utility to populate user data in the OTM directory?	1. Use data import to import a set of Last Names and UIDs. For an example, see "Importing LDAP ID (UID) Using an Entity's Extension Number (DN)" on page 326. 2. Pull in all of the remaining attributes during the first sync routine.
I want to synchronize the fields in both directions from LDAP server to OTM and from OTM to LDAP server. Is this possible?	Yes, synchronization in both directions is one of the choices and is configurable for each field. For a list of fields and the recommend sync direction, see Table 22 on page 321.
Does OTM LDAP synchronization work with CallPilot?	No, CallPilot does not support synchronization with an LDAP server, and does not support LDAP clients as an LDAP server.

Table 25
LDAP frequently asked questions (Part 4 of 4)

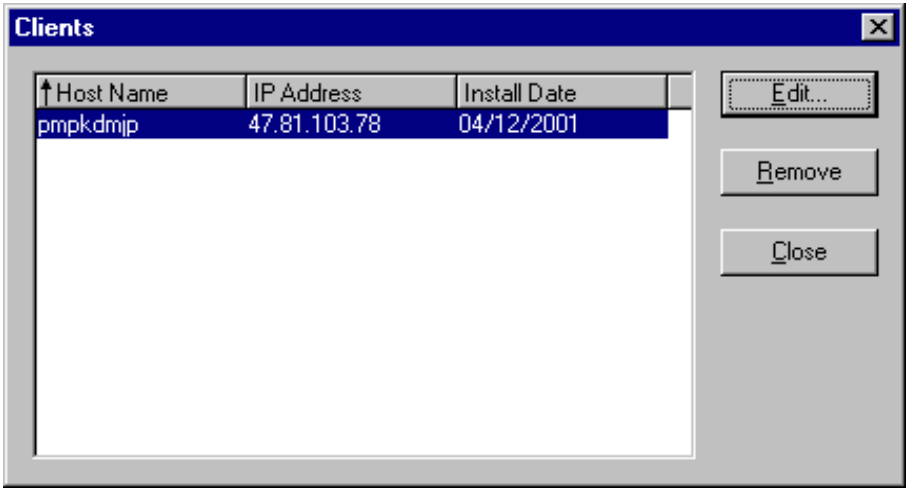
Question	Answer
I am adding a new messaging system (CallPilot or Meridian Mail). How do I import user information from the OTM Directory to the new messaging system?	1. Use the Import/Export utility to export relevant user data, such as Last Name, First Name, and Department, from the OTM directory to a comma separated file. 2. Edit the file to add the mailbox number for each user. 3. Use the edited file as the data file for importing to CallPilot using the AutoAdd function or to Meridian Mail using the AutoAdmin utility. Refer to the CallPilot or Meridian Mail administration guides for details.

Client utility

Use the Clients utility to update the OTM database when the host name or IP address of an OTM Client computer has changed. You also use the Clients utility to remove an OTM Client computer from the OTM database when you want to reassign the Client license to a new OTM Client.

To launch the Clients utility, select **Utilities > Clients** in the OTM Navigator window. The dialog box shown in Figure 150 opens.

Figure 150
Clients dialog box



To change the host name or IP address assigned to an OTM Client:

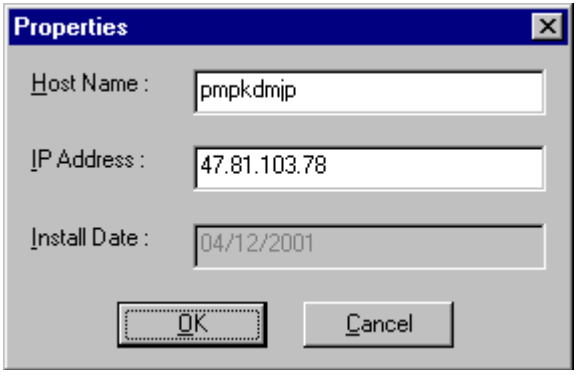
Procedure 62
Changing the host name or IP address

1 Select an OTM Client from the Clients dialog box.

2 Click **Edit**.

The Client Properties dialog box opens (Figure 151 on page 336).

Figure 151
Client Properties dialog box



3 Edit the host name or IP address as required.

4 Click **OK** to update the OTM database.

End of Procedure

Procedure 63
Removving an OTM Client

To remove an OTM Client:

1 Select an OTM Client from the Clients dialog box.

2 Click **Remove**.

A confirmation dialog box opens.

3 Click **OK** to remove the OTM Client from the database.

End of Procedure

Equipment Data Dump

OTM's Equipment Data Dump (EDD) is a critical database update operation. This operation dumps (saves) modified data from the switch's resident memory to database files on the switch's hard disk. These database files contain the active configuration information for phone-system terminals and users.

Synchronizing and securing data

Use OTM's Station Administration and Electronic Switched Network (ESN) applications to modify station data, Call Party Name Display (CPND) data, and ESN data. OTM stores these changes in its PC database files. The phone system cannot recognize these changes, however, until you upload the modified data to the system. This operation synchronizes switch data with current OTM data on the PC.

Updating the switch's data is a two-step process. The first step is to transmit modified OTM data from the PC to the switch's resident memory. OTM's Station Administration and ESN applications include a Synchronize menu for this purpose. The second step is to use OTM's EDD feature to dump modified data from the switch's resident memory to the switch's hard disk.

To secure modified data on Large Systems, you must dump it to the switch's hard disk.

Power interruptions erase all data in resident memory. When power is restored, switch data is automatically restored from its database files on the hard disk. Modified data that

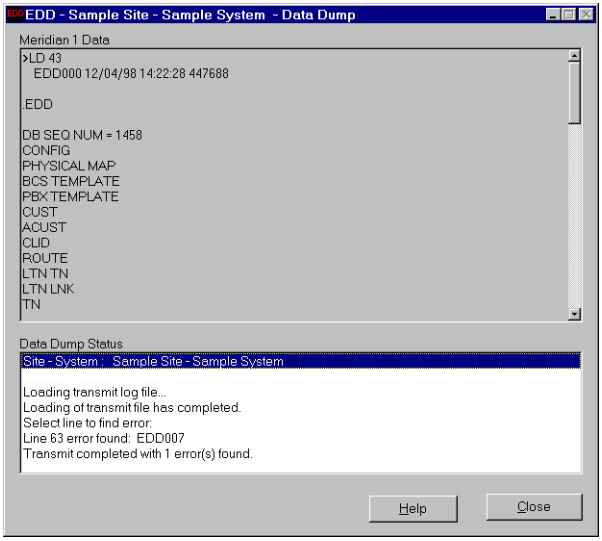
was *not* previously dumped to these database files is lost at the switch. Further, this data may be difficult to isolate in the PC's OTM applications, since *all* previously uploaded data shares the same TRN (transmitted*)* status. For these reasons, *always* perform or schedule data dumps after uploading data to the switch.

Accessing EDD

You can access EDD (Figure 152) from the File menu of the System window. The EDD selection is called Data Dump. This selection has its own submenu with the options Now, Schedule, and View Log.

You can select **Now** to perform the data dump immediately, Schedule to set up the operation to run automatically, or View Log to review status and error information from the most recent data dump.

Figure 152
EDD Data Dump dialog box



If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The data-dump operation takes just a few minutes. While modified OTM data is being dumped at the switch, status and error information about the data dump is actively logged to the PC. Both Now and View Log open the EDD Data Dump dialog box for

viewing or reviewing, respectively, this status and error information. This log is saved to the PC's hard disk and each data dump overwrites the existing log file.

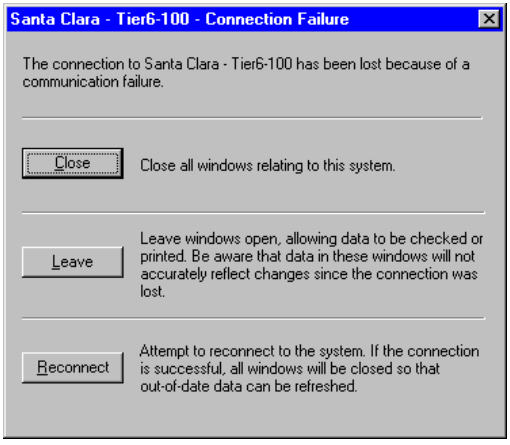
To access error information, open the Events window after the data dump, and double-click each error event of interest. This invokes help that is specific to each error.

The Schedule option opens the Scheduling dialog box. Here you can select when and how often you want to dump data at the switch. It is best to schedule this operation for a time soon after uploading OTM data to the switch. The OTM Scheduler sends the job to the Queue Manager at the designated time.

Responding to a connection failure

If you are connected to a system and that connection fails, a warning message appears (Figure 153).

Figure 153
Connection Failure dialog box


Santa Clara - Tier6-100 - Connection Failure
The connection to Santa Clara - Tier6-100 has been lost because of a communication failure.
Close
Close all windows relating to this system.
Leave
Leave windows open, allowing data to be checked or printed. Be aware that data in these windows will not accurately reflect changes since the connection was lost.
Reconnect
Attempt to reconnect to the system. If the connection is successful, all windows will be closed so that out-of-date data can be refreshed.

You are given the following options:

- Close all system windows and reconnect to the system.
- Leave the system windows open so that you can copy or print any or all of the following information:
  - Command results in the System Terminal window or any open Maintenance window
  - Alarms or events in the System Event Log

— Maintenance window objects, such as network loops within the Network Loops window

When you have finished printing the desired information, close the system window and reconnect to the system. Attempt to reconnect to the system.

Patch Utility tool

This tool is used as the primary vehicle for installing any PEPs (patches) or service updates (SU) that are required and provides the following functionality:

- Track all detailed patch information such as patch version number, date of creation, date of installation, Administration user who installs the enhancement/bug fix and a description of the patch
- Maintain backup folders for each patch
- Uninstall patches

Re-boot the PC after installing a PEP or service update.

Station Administration

The Station Administration application provides system-management modules for database administration in managing stations and station data, CPND management, synchronizing communication between systems, administrating Voice Mailbox, performing global system updates, and creating and designing reports and report forms OTM also has a web-based administration capability. For a comparison between Windows and web-based functions, please refer to "Comparison of OTM Windows and OTM web interfaces" on page 955

Enabling Station Administration

Procedure 64
Enabling Station Administration

To enable Station Administration, complete the following procedure:

1 Referring to procedures in Common Services, define Site and System Properties using the following Properties:

   a. From OTM Navigator menu bar, select **Configuration > Add Site > New Site Properties sheet,** define site properties.

   b. From OTM Navigator menu bar, select **Configuration > Add System.** In the System Properties dialog box, ensure all the following System Properties tabs are defined:

General	Include system name and short name.
Communications	Include at least one communications profile.
System Data	Add information on the system type and release. Identify System Parameters and enable software Packages.
Applications	Enable the Station Administration application and a corresponding communications profile.
Customers	Add at least one customer (usually Customer 0) and define this customer's properties to include a customer name, user ID, and password. You must define unique names, IDs and passwords for each customer added.

Numbering Plans	Define a numbering plan for each customer using the Numbering Plans tab found under the Customer Properties sheet. Station Administration uses information entered here to provide a list of available extensions (DNs), and validates the extensions against the applicable feature (for example, ACD DN).
Network	Define Gatekeeper Zones and Survivable Cabinets in Meridian 1 systems. Define Gatekeeper Zones, primary and alternate Signaling Servers, as well as Media Gateways and Branch Media Gateways for CS 1000S systems. This tab appears in the System Properties dialog box for Call Servers, Meridian 1 systems, Media Gateways, Survivable Cabinets, and Branch Media Gateways.

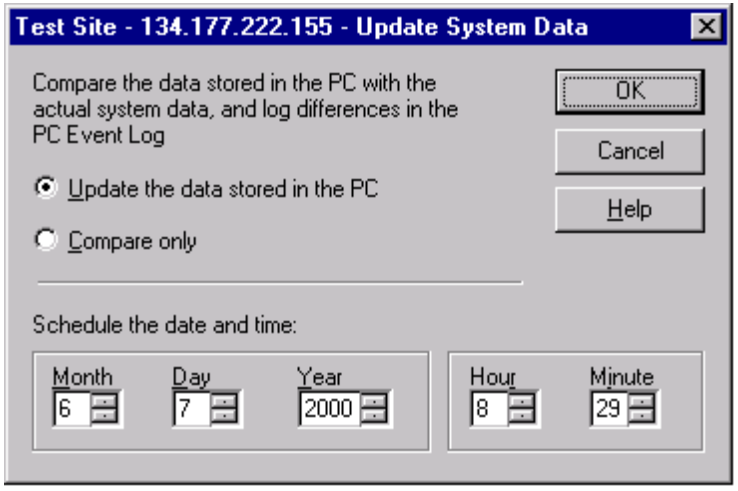
Once defined, sites and systems appear as icons in the OTM Navigator and System windows.

2 Update the system data.

a. From the OTM Navigator window, select a system for updating by double-clicking on the *System Window* icon. The System Window opens.

b. From the System Window menu bar, choose **File > Update System Data**. The Update System Data dialog box opens (Figure 154).

Figure 154
Update System Data dialog box



When you update the system data, your X11 packages, Customer Data Block information, and Configuration Record information are brought over to OTM.

c. Click **OK** to update the system data.

If you have configured a system as an Branch Media Gateway but have not enabled Package #390, the update process is aborted. The following error appears in the event log “Error: Branch Media Gateway Package #390 is not present: Aborting ‘Update System Data’.” To correct this problem, enable Package #390, or reconfigure the system as a non-Branch Media Gateway system.

3 Retrieve customer station data.

a. Open the System window and view the applications available for the system you have defined.

b. Open the Station Administration application under the Stations icon.

c. With the Station Administration window open, choose ***Synchronize-Retrieve-All*** from the menu bar.

When station data is retrieved, the primary DN and names from the name display assigned to station prime DN are used to populate the OTM Directory. Refer to “Call Party Name Display” on page 392 for further detail.

4 Retrieve Reserve Unit TN information.

a. With Station Administration window open, choose **Synchronize > Retrieve > Reserved Unit TNs**. The Synchronization window opens.

b. Click **OK** to begin retrieval.

5 Retrieve CPND configuration

a. Open the System window.

b. View the applications available for the system you have defined and open the CPND application under the Stations icon. The CPND Name window appears listing names of users on the system.

c. Choose **View > CPND** from the menu bar. The CPND window appears.

d. Choose **Synchronize > Retrieve > Specify** from the menu bar. The Call Party Name Display Retrieve window opens.

e. Enter the customer number. Click **OK**. The Synchronization window opens.

f. Click **OK** to begin retrieval.

CPND names are automatically retrieved as part of customer Station data retrieve. This step is not necessary if you have performed a customer Station data Synchronize > Retrieve > All.

6 Retrieve CPND names

a. With the CPND window open, choose **View > CPND Name**. The CPND Name window appears.

b. With the CPND Name window open, retrieve CPND data for each customer on the system. Choose Synchronize > Retrieve > All from the menu bar. The Synchronization window opens.

c. Click **OK** to begin retrieval.

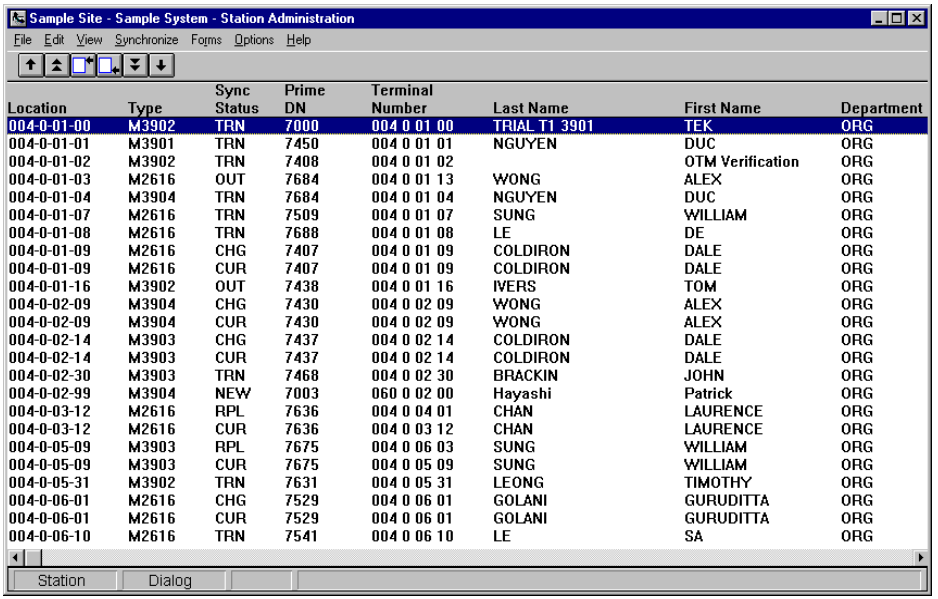
Repeat this step for each customer on the system.

End of Procedure

Using Station Administration

The Station Administration window is the interface for launching and using applications in OTM. The window (Figure 155) contains a Menu bar, Selector toolbar, and a viewing area for displaying one of four views.

Figure 155
Station Administration window



Location	Type	Sync Status	Prime DN	Terminal Number	Last Name	First Name	Department
004-0-01-00	M3902	TRN	7000	004 0 01 00	TRIAL T1 3901	TEK	ORG
004-0-01-01	M3901	TRN	7450	004 0 01 01	NGUYEN	DUC	ORG
004-0-01-02	M3902	TRN	7408	004 0 01 02		OTM Verification	ORG
004-0-01-03	M2616	OUT	7684	004 0 01 13	WONG	ALEX	ORG
004-0-01-04	M3904	TRN	7684	004 0 01 04	NGUYEN	DUC	ORG
004-0-01-07	M2616	TRN	7509	004 0 01 07	SUNG	WILLIAM	ORG
004-0-01-08	M2616	TRN	7688	004 0 01 08	LE	DE	ORG
004-0-01-09	M2616	CHG	7407	004 0 01 09	COLDIRON	DALE	ORG
004-0-01-09	M2616	CUR	7407	004 0 01 09	COLDIRON	DALE	ORG
004-0-01-16	M3902	OUT	7438	004 0 01 16	IVERS	TOM	ORG
004-0-02-09	M3904	CHG	7430	004 0 02 09	WONG	ALEX	ORG
004-0-02-09	M3904	CUR	7430	004 0 02 09	WONG	ALEX	ORG
004-0-02-14	M3903	CHG	7437	004 0 02 14	COLDIRON	DALE	ORG
004-0-02-14	M3903	CUR	7437	004 0 02 14	COLDIRON	DALE	ORG
004-0-02-30	M3903	TRN	7468	004 0 02 30	BRACKIN	JOHN	ORG
004-0-02-99	M3904	NEW	7003	060 0 02 00	Hayashi	Patrick	ORG
004-0-03-12	M2616	RPL	7636	004 0 04 01	CHAN	LAURENCE	ORG
004-0-03-12	M2616	CUR	7636	004 0 03 12	CHAN	LAURENCE	ORG
004-0-05-09	M3903	RPL	7675	004 0 06 03	SUNG	WILLIAM	ORG
004-0-05-09	M3903	CUR	7675	004 0 05 09	SUNG	WILLIAM	ORG
004-0-05-31	M3902	TRN	7631	004 0 05 31	LEONG	TIMOTHY	ORG
004-0-06-01	M2616	CHG	7529	004 0 06 01	GOLANI	GURUDITTA	ORG
004-0-06-01	M2616	CUR	7529	004 0 06 01	GOLANI	GURUDITTA	ORG
004-0-06-10	M2616	TRN	7541	004 0 06 10	LE	SA	ORG

Menus and commands

The menu bar contains the following menus and commands as shown in Figure 156.

Figure 156
Menu bar:

Selected sub-menus are indicated by a check mark displayed beside the sub-menu title on the menu and are displayed in the status bar on the main window. Menu items that are not available to you are shown dimmed.

File menu (File)

Use the File menu to access the station data of a selected system. The File menu contains the following sub-menus:

Reports

Design and generate reports based on existing station data. This item includes the Report Generator and two existing reports:

Bridges

A list of bridges on the system.

Multiple appearances

A list of multiple-appearance stations.

Excess DNs

A list of DNs in the OTM Directory that do not have matching DNs in Station Administration.

Desig. Strip

Send data for labeling buttons and keys on an instrument to an OTM viewer where you can browse and print the data.

Print

Send the station list to an OTM viewer (described in "Generating reports" on page 495) for browsing and printing the data. Choose from the following display formats:

Short Format

One-page abbreviated list of station data.

By Feature Group

Station data by Feature Group.

By Field Mnemonic

Station data by field mnemonic.

Validate

Validates field values (full or partial, selectable in a submenu) for selected station records:

Partial: Checks selected fields in the station records that, if incorrect, can cause a transmission failure during synchronization.

Full: Checks all fields in the selected station records.

Audit	Synchronizes records in the OTM Directory and Station databases: **Partial**: Checks the OTM Directory database for all changed employee records and updates the Station database. **Full**: Attempts to bring the Station database into full synchronization with the OTM Directory database by cross-checking each Station record with the OTM Directory.
Rebuild Directory	Rebuilds the OTM Directory database. Select *From CPND* Database to use the information stored in the CPND database. Select *From Station Database* to use the information store in the Station Administration database. This option enables you to overcome a situation in which the OTM Directory database has become corrupt.
Conversion utility	Launches the conversion utility, used to update OTM data. For more information, see "Conversion utility" on page 472.
Close	Closes Station Administration and returns to the OTM window. OTM automatically saves station updates as they are made. This means that you need not close an open system before quitting the application

Edit menu (Edit)

Use the Edit menu to change data within an open system. The Edit menu contains the following sub-menus:

Add / Delete / Update / Restore	Adds/removes/modifies/restores stations for the currently open system.
Global Update / Select / Select All	Enables you to modify selected fields in a group of selected stations.
User Field Names	Assigns names for the 10 user-defined fields for the current system.
Undo Update/ Cut/Copy/Paste/ Swap	General editing commands for moving and removing information.

View menu (View)

Use the View menu to choose the station data parameters you want to view. The View menu contains the following sub-menus:

Station	appears a list of all stations defined for this system. When you choose an Edit function, the highlighted station record is opened. If none are defined, you can only choose Edit > Add.
Pending	appears all pending records. This provides a list of all stations that are not synchronized with the system.
Template	Accesses templates that contain station definitions that the open system may use frequently.
Hardware	appears line cards used in the system. The Reserve TN feature adds new fields in this view to reserve units on the supported card types.
Employee Selector	Launches the Employees editor.
External Party	Launches the External Party editor.
Role/Project	Launches the Role/Project editor.
Organizational Hierarchy	Launches the Organizational Hierarchy editor.
Sort	appears when the Station or Pending view is selected. The list can be sorted by Last Name, First Name, Directory Number, Location, Terminal Number, Instrument (Telephone) Type, Sync Status, or Department.

Sorting affects only the displayed list. It does not change the actual order of the station records within the database.

Synchronize menu (Synchronize)

Use the Synchronize menu to schedule reception or transmission of station data using OTM communications functions. See “Enabling communications: synchronizing” on page 454 The Synchronize menu contains the following sub-menus:

Retrieve	Enables selection of station data for retrieval from the system into the station database. You can define criteria to select stations for download. Retrieve also enables a Parse Only option that formats retrieved data for OTM.
Transmit	Enables selection of station data for transmission to the system.
Reconcile	Compares discrepancies between station data and the OTM database and deletes invalid set information from the OTM database. Information about deleted sets is recorded in a log file. See “Communications logs” on page 469

Before using the Reconcile command, be sure to Retrieve the latest station data. This ensures the station data is compared to the latest OTM database.

Forms menu (Forms)

Use the Forms menu to configure form-based station administration.The Forms menu contains the following sub-menus:

Forms Interface	Enable or disable form-based station administration.
Select Form	Select a form to be used by form-based station administration.
Edit Custom Form	Run the station form editor.

Options menu (Options)

Use the Options menu to configure options that affect the operation of the Station Administration and CPND Administration modules. The Options menu contains the following sub-menu:

Global Preferences	Invoke the Global Preferences function to configure the operational mode, optional station data validations and optional Name and CPND Handling.

Help menu (Help)

Use the Help menu to display documentation to help you understand and use the application. The Help menu contains the following sub-menus:

Contents	appears the Contents page of the online documentation system.
Search Help On	Enables you to type in key words and select a topic of interest from the list of Help topics.
How to Use Help	Provides basic instructions about using the online documentation system.
About Station Admin	Provides information about Station Administration

Station Administration views

Station view

The Station view is the default view when Station Administration is launched from a selected System Administration icon.

To display Station view from another view: From Station Administration menu bar, select **View> Station**.

The Station view appears the list of stations for the system. Each line displayed in Station view contains the following fields of data record for one station.

Location A unique station identifier. OTM uses the value here as an index to the station

Type The instrument defined for the station.

Sync Status: An indication of whether system data is synchronized with OTM data. The following list defines the synchronization status for station data:

NEW A station that has been created on OTM but not yet transmitted to the system.

TRN A station that has been synchronized with the system. The OTM software has determined that the version of this station in the OTM PC database is consistent with the version of this station on the system.

CHG A station that has been changed on the system. The OTM system has determined that the station has been updated on the OTM PC database and that the version on the system does not yet reflect the OTM update activity.

RPL A station defined in OTM to replace synchronized station data.

OUT A station that has been marked for deletion on the OTM PC database. It will not be deleted from the OTM PC database until the station has been OUTed (deleted) on the system during a Synchronize/Transmit operation. An OTM user may update a station marked **OUT**. The OTM system asks whether the station is to be restored before allowing you to update the station.

CUR The **CUR** record is created when the user double clicks on a record whose sync status is **TRN**, and makes some changes that results in **CHG**, **RPL,** or **SWP** record having the changed data and CUR having the original data.

SWP A station that has been marked to have its Terminal Number swapped with the Terminal Number of a different station. If the previous sync status of the two stations is not **NEW**, their sync status is changed to **SWP**.

Prime DN	The prime directory number.
Terminal Number	The station terminal number, representing the address within the system.
Last/First Name	The station user's name.
Department	The department in which the station is used.

The Pending View

To display the Pending view: From the **Station Administration** menu bar, select **View > Pending**.

The Pending View appears all Station records that have not yet been synchronized with the switch. Only CHG, RPL, NEW, OUT, and SWP records are available in this view. Pending shows both the CHG and CUR versions of a station.

The Template view

To display Template view: From the **Station Administration** menu bar, select **View > Template**.

The Template view list is the same as the Station view, with one exception, the Sync Status field is not shown in Template view. The value of the Location field in the list is the actual name of the template as displayed in the template list field of the Add Station dialog box.

The Hardware view

To display Hardware view: From the **Station Administration** menu bar, select **View > Hardware**.

The list appears line cards for station TN assignment. If Hardware Validation is active, then the TN added to each set is validated against the TN card type. The cards defined under the hardware view are also used for automatic TN assignment.

The Reserved Units dialog box is accessed through the Hardware Configuration dialog box. Click Reserved Units.

Managing stations

You can add one or more stations, adding each station individually or with a Station template. Once added, you can also delete the stations, swap TNs between telephones, or add a customized Station template to Station Administration.

Using a Station template, you can define multiple stations that have data in common. Only information for the Location field value is required for identification in the list and by the Station Administration module. A template can contain all or part of a station definition are changed in the same way as stations defined individually. You can change template data in exactly the same way as station data.

Adding stations

You can add new stations to the list in the Station Administration view, use a template that defines data for the station or stations that you are adding, or add each station individually.

IMPORTANT!

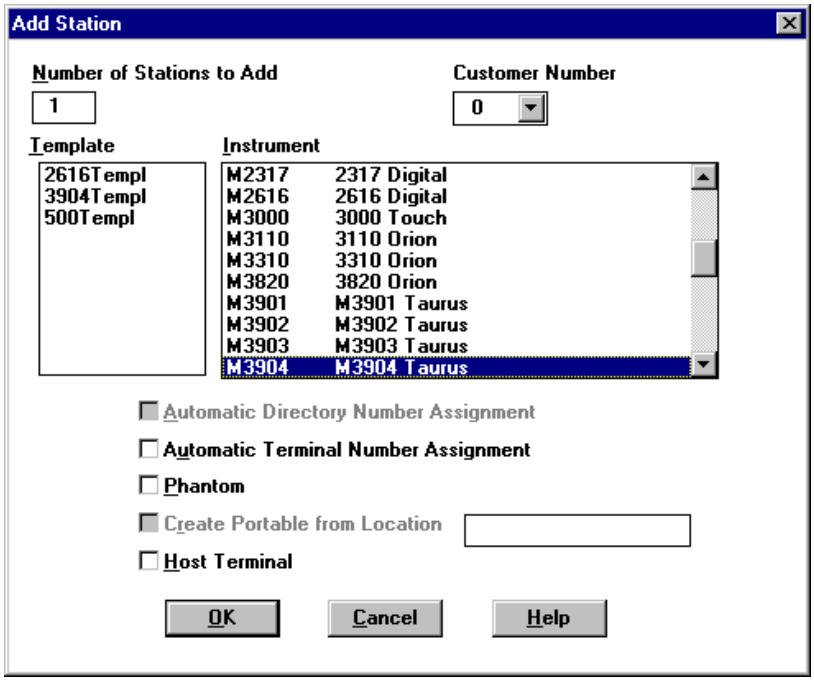
If OTM is in Maintenance mode, you are prompted to schedule communication with systems when adding new stations. You can synchronize the system data now, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See “Enabling communications: synchronizing” on page 454.

Procedure 65
Adding new stations

At any time, you can click **Cancel** to return to the Station list window without adding stations.

1 From the Station view menu bar, select **Edit > Add.** The Add Station dialog box opens (Figure 157).

Figure 157
Add Station dialog box



The Add Station Dialog box contains the following fields for editing:

Number of Stations to Add	A decimal numeric field in the range 1-999. The default value is 1.
Customer Number	The default entry is Customer number 0. New stations are added for this customer using the hardware and numbering plan defined in the site module for this customer.

Template	This field is a single-choice, scrollable, value-list field. If a template name is highlighted, then clicking **OK** adds the selected number of stations with the characteristics defined in the selected template. (Create templates using Edit - Add in the Template view.)
	The Template field and the Instrument field are mutually exclusive. An instrument is defined in the template.
Instrument	This field is a single-choice, scrollable, value-list field. It is a list of possible devices (sets) that a station can use. The currently selected device is highlighted using the mouse or scrolling with the arrow keys.
Automatic Directory Number Assignment	Check to automatically assign the DN for DID (Direct Inward Dialing) stations for each station added. The assigned DN is the next available DID DN in the Customer Numbering Plan for this site. To use Automatic DN Assignment for non-DID Directory Numbers, use a template that contains a partial DN, thereby forcing Station Administration to assign DNs within that range.
Automatic Terminal Number Assignment	Check to automatically assign the TN for each station. The assigned TN will be the first address (Loop, Shelf, Card, Port) available for the specified instrument as defined in the Hardware designation for this site. Note that Reserved Unit TNs are skipped during Automatic Terminal Number Assignment.
Phantom	Check to use this station as a phantom station. The TNs available for a phantom station or virtual terminal are phantom TNs.
	This is the unique station identifier field. It can contain up to twelve contiguous alphanumeric characters. Note that if the DES field of the station database is not defined, it will assume the first 6 characters of this field at the time of synchronization.
Host Terminal	Check to use this station as a host terminal.

2 Add a single station, a phantom station, or multiple stations. You must give each new station a unique Location field value.

Adding a single station

Procedure 66
Adding a single station

a. Select and edit all applicable fields, except the **Number of Stations to Add** field, as desired. Leave the default number 1 in the **Number of Stations to Add** field.

b. **OR** assign only a unique identifier to the new station and update the other fields at another time.

If, after clicking **OK**, the Location field for one or more of the stations is not unique, an error box appears. Click **OK** in the error box to return to the previous dialog box to make the correction

c. Click **OK**. See “Managing station data” on page 364.

End of Procedure

Adding multiple stations

You must give each new station a unique Location field value.

Procedure 67
Adding multiple stations

a. In the **Number of Stations to Add** field, insert a number from 2-999.

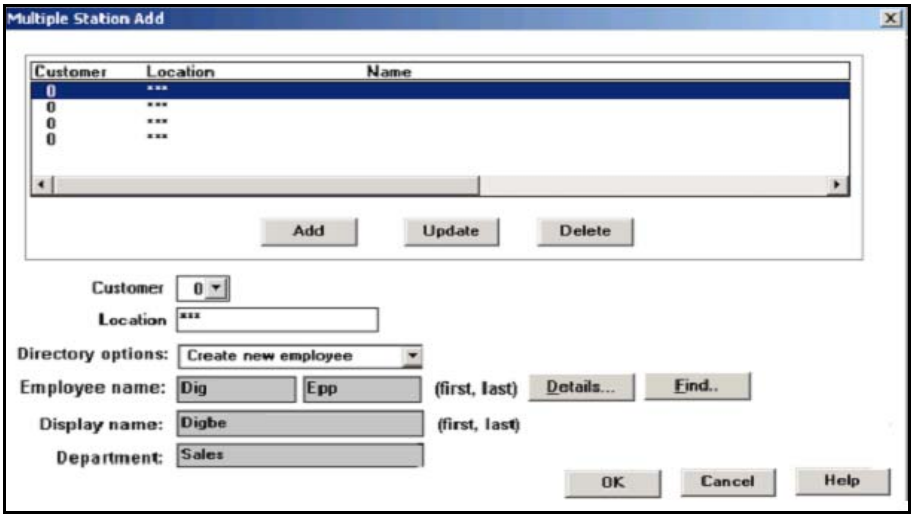
b. Select and edit all applicable fields as desired.

IMPORTANT! If, after clicking **OK**, the Location field for one or more of the stations is not unique, an error box appears. Click **OK** in the error box to return to the previous dialog box to make the correction.

c. Click **OK**.

The Multiple Station Add dialog box opens (Figure 158).

Figure 158
Multiple Station Add dialog box



d. Using the following function buttons in the Multiple Station Add dialog box,

Add Adds another station to the bottom of the list (using the template of the current list items). The new station becomes the current one.

Update Inserts the values in the data entry part of this dialog into the selected item.

Delete Removes the selected item from the list

e. Edit the displayed list containing the following fields:

Customer A single selection drop-down list of customers using the current site. The default displayed value is taken from the customer using the currently selected station in the station list.

Location A holding value indicated by asterisks that you must redefine in the data entry section of the dialog as a unique value for the site. You cannot add these stations until each has a unique value in this field.

Employee Name The value, or null, here is taken from the values of the First Name and Last Name, defined in “Directory Options” on page 371

Department The default value is taken from the value of the employee..

f. Insert values into the following fields:

Customer An optional field that contains a drop down list box with the currently defined customer numbers for this site. The current value is that selected in the Add Station dialog.

Location You must supply a unique Location field value. This field can contain up to twelve contiguous alphanumeric characters. Note that if the DES field of the station database is not defined, it will assume the first 6 characters of this field at the time of synchronization.

If, after clicking **OK** and the Location field for one or more of the stations is not unique, an error box appears. Click **OK** in the error box to return to the previous dialog box to make the correction

g. Select Directory Options to populate the displayed list. Refer to “Directory Options” on page 371 for complete instructions.

Name The value, or null, here is taken from the values of the First Name and Last Name, concatenated, if any, in the template you selected for the stations to be added in the Add Station dialog.

Display Name When the Link To Directory check box selected, a single display name entered here is associated with an employee and can be synchronized with a corporate LDAP server. If an employee has more than one DN, and there are different display names associated with each of the DNs, then either none or only one of the names is shown as the Display Name attribute of the Employee Directory.

Department The value, or null, here is taken from the value in the template you selected for the stations to be added, if any, in the Add Station dialog box.

h. Click **OK**.

End of Procedure

Adding a phantom station

Phantom TNs can be assigned only to analog sets.

Using the Phantom Terminal Number (PHTN), you can define and configure TNs with no associated physical hardware. When used in conjunction with the Call Forward All Calls (CFW) and Remote Call Forward (RCFW) features, a call to a phantom station is redirected to an existing telephone. For more information on phantom Terminal Numbers, see *Features and Services* (553-3001-306).

Retrieving station data from a system with existing phantom stations preserves the phantom loops defined for those phantom stations. Phantom loops can only contain phantom stations.

Procedure 68
Adding a phantom station

1. Use LD 97 to create a phantom loop.
2. Choose **View > Hardware** from the Station Administration window Station view. The Hardware view appears.
3. Choose **Edit > Add**. The Hardware Configuration view appears.

   Phantom cards have the prefix PHT. If you do not enter values, OTM enters the next available loop-shelf-card information not used by the selected card into the appropriate fields. Cards must have unique loop-shelf-card combinations.
4. Select the phantom card from the drop-down list.

5 Click **OK** to return to the Hardware Configuration view.

6 Choose **View > Station** to return to the Station view. Choose **Edit > Add**. The Add Station dialog box opens.

7 In the Instrument field, select an analog type set (for example, the 500 set). Select the Phantom check box.

8 Click **OK**. The Station Data dialog box appears.

9 Enter the terminal number for the station in the Terminal Number field. Each station must have a unique TN.

10 Double-click in the Terminal Number field to display the Terminal Numbers window listing available terminal numbers associated with this loop. If no phantom cards are defined, this window is blank.

11 Double-click an available terminal number on the list to enter that value into the Terminal Number field in the Station Data dialog box.

End of Procedure

Deleting stations

You can select stations for deletion from the OTM station database in the Station view.

IMPORTANT!

There are special considerations when deleting stations that contain references to Voice Mailbox directory numbers. Refer to "Voice Mailbox" on page 437 for more information.

Procedure 69
Deleting a station

1 Choose one of the following steps:

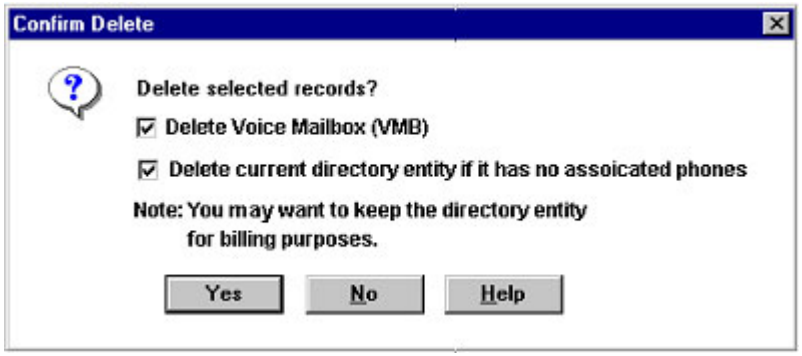
a. Press**Delete** .

b. Select **Edit > Delete**.

c. Select **Edit > Cut**.

A Confirmation window appears

Figure 159
Confirme Delete



When a phone is deleted, it is removed from the directory, but DNs are not removed.

2 Select one or both of:

- Delete Voice Mailbox
- Delete current directory entity if it has no associated phones.

3 Click **Yes** to remove the station.

End of Procedure

Undeleting a Station

If the stations to be deleted have never been synchronized with the system (Sync status is NEW), they are removed from the list in the window.

To Undelete a non-synchronized station, Select **Edit > Undo Update**. This undelete is only available until you perform another edit function on the station list.

Deleting through synchronization

If the Sync status is not NEW, deleted stations are marked for deletion from the system at sync time by setting the sync status to OUT. These stations will not be deleted from the list until synchronization. If you attempt to change such stations, you are prompted to bring them back before the update can be performed. If you do bring them back, the status is reset to the original sync status. Attempts to delete stations with sync status OUT are ignored.

To delete a station with sync status of CHG, select the associated CUR record and choose **Edit > Restore**.

Swapping TNs

The Swap function enables you to swap the terminal numbers (TNs) of two telephones. Two CUR record are created for both telephones. The sync status of the telephones is changed toSWP if their previous sync status is not NEW.

Swapping Telephones

You can swap only two telephones at a time. CUR records cannot be swapped. The telephones that are swapped with each other should have compatible line card types. For example, a digital telephone cannot be swapped with an analog telephone.

Swap Group

A group of telephones that are swapped to each other is called a swap group. For example, if Telephone A is swapped with Telephone B, and at a later time, Telephone B is swapped with Telephone C, Telephones A, B, and C form a swap group. When a telephone is selected for transmit from a swap group, you are asked to transmit the remaining telephones in the swap group.

SWP Records

SWP records cannot be deleted in Station Administration. The sync status of SWP records can be changed to TRN or NEW through a global update. SWP records can be

restored to their original values by selecting Edit - Restore. This action impacts the transmit results of the other telephones in the swap group.

Terminal number is disabled for SWP records. When you select a form file to run a report, check boxes are added for sync status TRN, NEW, OUT, RPL, CHG, CUR, and SWP. When the check box is selected, the records with the corresponding sync status are included in the generated report. The SWP check box is selected by default.

Adding a station template

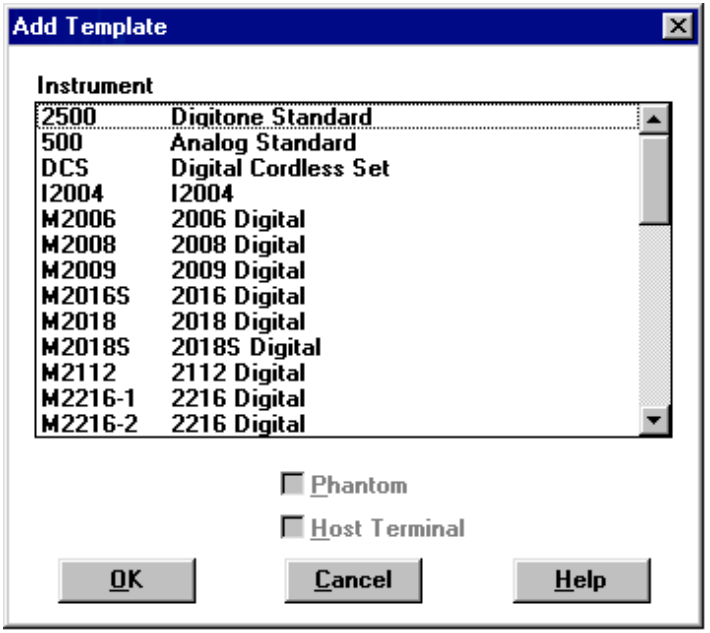
You can use a template of station data to add multiple stations (or a single station) with common data.

Procedure 70
Adding a station template

1 From the Template view, select **Edit > Add**.

The Add Template dialog box containing a list of instruments (telephone types) appears (Figure 160).

Figure 160
Add Template dialog box



2 Select an instrument that you want to use for this template.

3 Click **OK** to display the dialog box for the instrument. You can change the data in this template as if it were a regular station. See “Managing station data” on page 364.

End of Procedure

If your system is configured for the Virtual Office feature available on M3900 Series Meridian Digital Telephones, select the appropriate instrument and select the Phantom check box to add a Virtual Terminal template, or select the Host Terminal check box to add a Host Terminal template.

Modifying a template

To modify a template, complete the procedure for adding a single station.

Managing station data

Station Administration provides data management for updating Station data, managing Designation Strips, validating station data, Directory services, and Station and Directory synchronization..

IMPORTANT!

In a client/server setup, the OTM navigator database supports only updates by a single user at any one time. This includes updating site/system properties and any add/move/delete functions from the navigator. If multiple users try to update the database at the same time, then the "OTM Navigator - Database in Use" dialog appears.

If OTM is in maintenance mode, you are prompted to set up communication with the system. You can synchronize the data at this time, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See “Enabling communications: synchronizing” on page 454.

There are special considerations when deleting stations that contain references to Voice Mailbox directory numbers. Refer to “Voice Mailbox” on page 437 for more information.

Location field

The Location field in the station database identifies and indexes a station record. Station data records are stored and retrieved by the value in this field. **Since the Location is the primary identifier for a station within OTM, each station must be assigned a unique Location value.** A new station cannot be created in OTM until you assign a unique Location value. Location is the only station record field that is required by OTM.

OTM validates this field during data entry and does not allow non-unique values or no value. The Location field is not stored in the system.

Data retrieved from a system containing stations not currently defined in OTM has the fully qualified Terminal Number field value (with dashes for separators instead of blanks) assigned to the Location field. You can edit this value to conform with your Location value rules. Whenever you modify station data that has already been synchronized with the switch, the Sync Status for that station is set to **CHG**. This is an indication that OTM and the system are not in sync.

Updating station data

Data values and information can be updated and edited as needed for keeping Stations current.

You can update multiple stations at one time. See "Station Global Update" on page 442.

Procedure 71
Updating the station data for one station

1 Select a station and select **Edit > Update**.

Data values displayed depend on whether other instruments contain a subset of the data for this instrument. The update procedure for each field and function is the same as that described here. A Station Data dialog box appears (Figure 161 or Figure 162. for an IP-KEM (key Expansion Module)

Figure 161
Station Data dialog box

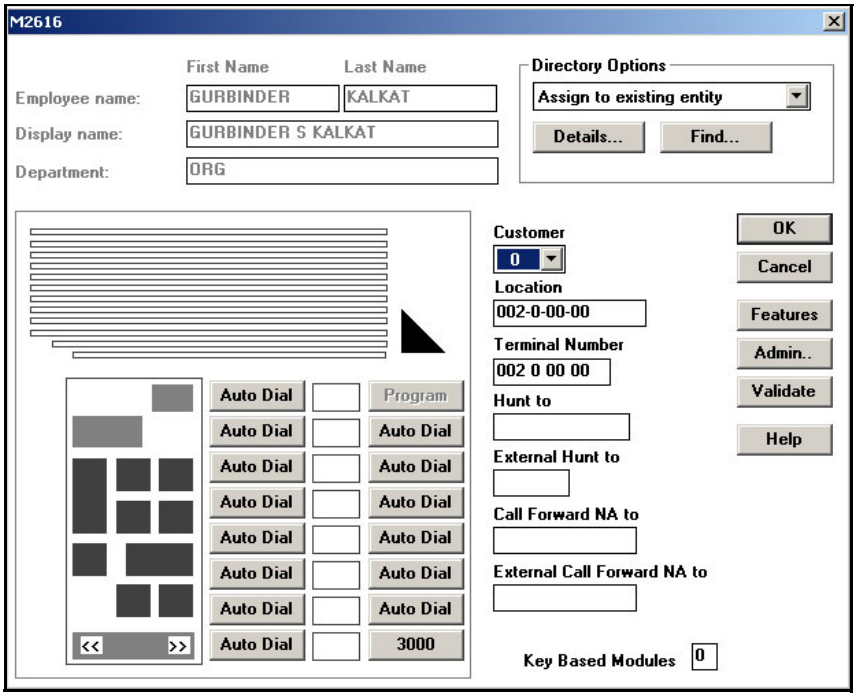
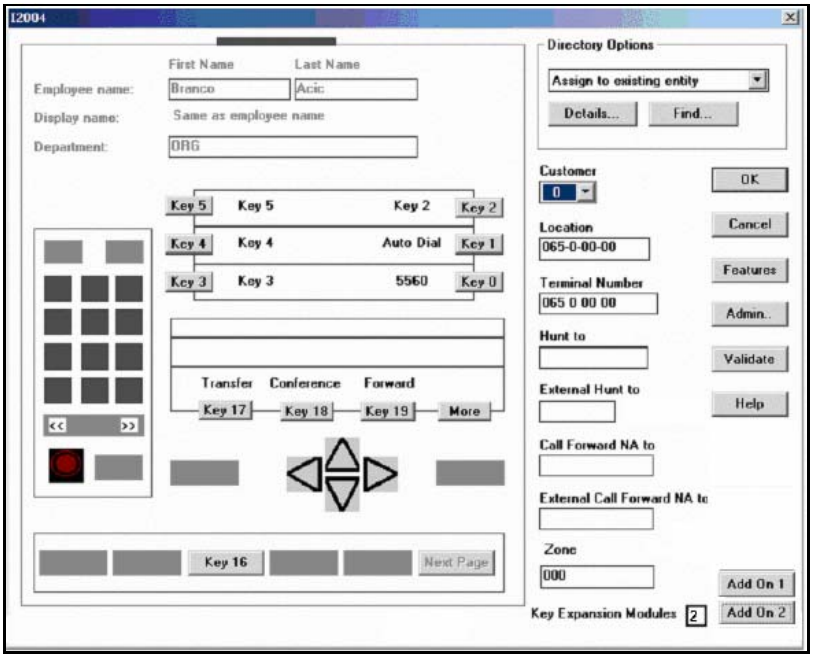


Figure 162
IP-Key Expansion Module



2 Edit values in one or more of the following data fields, as described in the following section.

Data fields for an instrument

First Name / Last Name	The First Name and Last Name display fields are linked to the OTM Directory. To change this field, proceed to Directory Options.
Display Name	
Department	This field appears the department information that has been entered into the OTM Directory. *T*o change this field, proceed to Directory Options
Customer	Select a customer from a drop-down list that contains the customers associated with the site.

Location (required)	The Location is a unique identifying code for this station, up to 12 characters. OTM does not let you assign a code that is already in use for this site. Note that if you have not defined DES (OTM data only), then OTM assigns the first six alphanumeric characters of the Location field when you synchronize OTM data with the system. Note also that on receiving data that is not defined in OTM from the system, the Location field is assigned the full TN value, including hyphen separators, of the station.
Terminal Number	This field contains four separate numeric fields that represent the system address (the terminal number contains values for Loop, Shelf, Card and Unit) used by this station.
Hunt to / External Hunt to	You can enter a DN in these fields that will receive calls if this station is busy. Note that you can use any telephone number, even one that is external to this site. However, you can double-click this field to display the DN list defined in the Customer's Number Plan for this site and choose one of those. The External Hunt is for incoming calls that are not from a DN in the Numbering Plan.
Call Forward NA to / External Call ForwardNA to	You can enter a DN in these fields that will receive calls if there is no answer at this station after a predetermined number of rings. These fields operate in the same way as the Hunt to and External Hunt to fields (see DN Assignment).
Add on Modules	Available only for M2000 Series and M3900 Series digital telephones.You can enter a number in the range 0-2, which indicates the number of add-on modules attached to the set. Additional function buttons (for example, Add On 1) may appear on the dialog box, based on the entry in this field.

Key based modules

This field is available only for M2X16 Series, M3904, and M3905 digital telephones. It allows you to program key features for add-on key modules. You can enter a number in the range 0–2, which indicates the number of add-on modules attached to the set. Additional function buttons (for example, Add On 1) may appear on the dialog box, based on the entry in this field.

You can click these additional buttons to display a dialog box that graphically represents the keys of the add on module. You assign features to the add-on modules the same way that you assign features to keys on the set

Display based modules

This field is available only on the M3904 and M3905 telephones. It allows you to program key features for an add-on soft-labeled key module. Enter the number 1, which indicates the presence of the Display-Based Add-on attached to the set. An additional function button, called Add on 1, appears when you enter 1 in the DBA field.

Click **Add on 1** to display a dialog box that graphically represents the keys of the Display-Based Add-on. You assign features to the add-on module the same way that you assign features to keys on the telephone

IP Phone Key Expansion Module (KEM)

Nortel IP Phone 2002 and IP Phone 2004 (Figure 162). There are 24 keys in two columns for each page. Enter 1 or 2 to set the key pages. If IP Phone KEM is 1, two pages have a total of 48 keys per module for the IP Phone 2004 . When IP Phone KEM is 2, the page key is disabled for IP Phone 2004 so that the two KEMs provide 24 keys each. IP Phone 2002 does not support the paging functionality and hence the expansion module comprises of 24 keys in two columns with no page key.

Key Lamp Strips

This field is available only for QSU60 digital telephones. It is a numeric field that can contain a number in the range 1–7. The default value is 1 which represents the key lamp strip on the basic telephone. If you enter a number up to 7 in this field, the new number is validated when the cursor is moved out of the field. That number of additional key lamp strips (less the one on the telephone), labeled KLS 2-7, appears in the dialog box. You can select one of these buttons to display a dialog that graphically represents the keys of the add-on module. Assigning features to the add-on keys is the same as for the regular keys on the telephone.

For sets that do not have keys or key lamps, the available features assignment dialog box appears within the set dialog box itself. The assignment procedure is as described in “Key Assignments” on page 375.

All other sets use the SL-1/500 Strip layout. Stations with ACD keys have both the ACD DN and the Position ID printed. It is up to the user to attach the desired label to the appropriate key

Directory Options

a. From the Directory Options drop-down list, select one of the following tasks:

Create a new employee	Creates a new employee
Create new role/ project	Creates a new role/project in the department.
Assign to existing entity	Assigns a telephone to an existing entity or reassigns the existing assignment to another entity.
Do not assign to an entity	Enables a new telephone not to be assigned or removes a telephone from an assignment

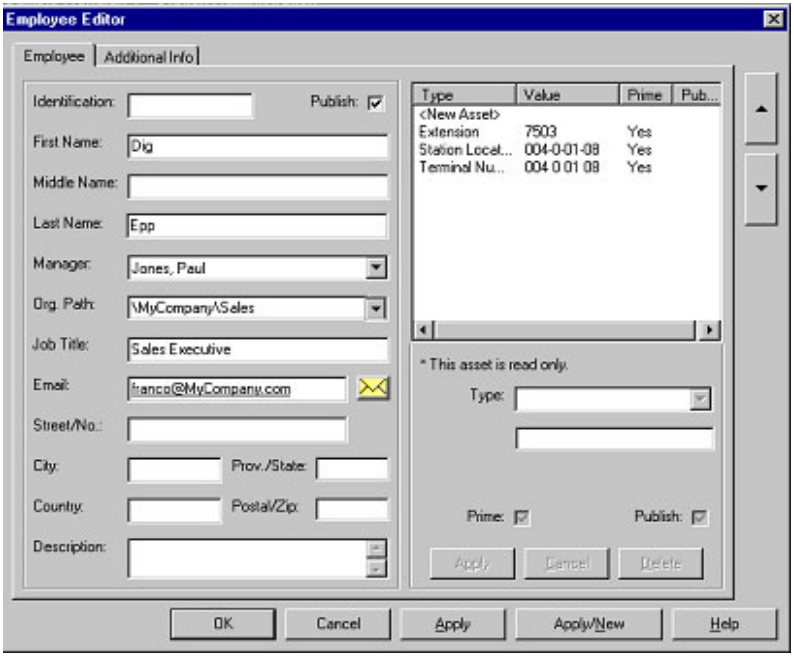
b. Complete the following procedure for the selected task:

Create a new employee

Procedure 72
Creating a new employee

1 Click **Details** to open new blank Employee Editor (Figure 163). Fill in the fields. Go to Additional Info tab if display name is different than employee name.

Figure 163
Employee editor

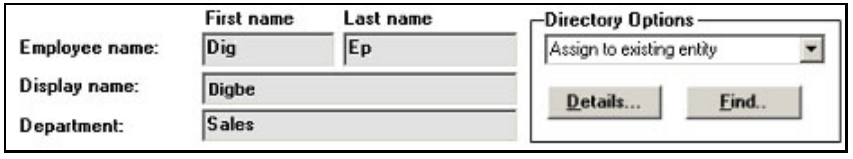


Note: When creating a new entity (employee or project/role) and the entity name is too long, a truncated display name is created automatically and is visible in the Station GUI. The user has the option of changing this auto-generated display name.

2 Click **OK**

The Station UI is updated to reflect the new assignment (Figure 164).

Figure 164
Station UI-Employee

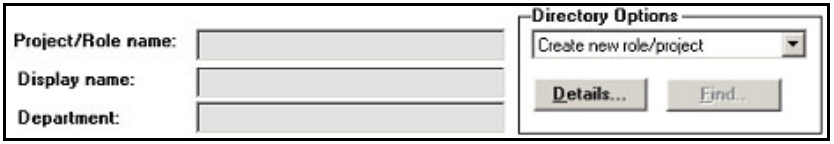


End of Procedure

Create new/role project

After selecting this task from the Directory Options drop down list, the format of the name changes to the following (e.g. only one field and the label text is different) (Figure 165).

Figure 165
Station UI-Project/Role.

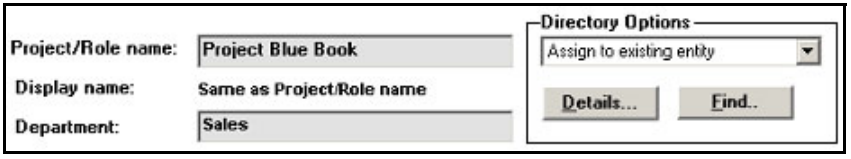


1 Click **Details** and enter in role name, etc.

2 Click **OK**

The names and department display in Station and the drop list is updated to reflect the new state (Figure 166).

Figure 166
Station UI-Project/Role updated.



End of Procedure

Assign to existing entity

Procedure 73
Assignning to existing entity

1 Click **Find** to display the Entity Selector (Figure 167).

Figure 167
Enity Selector.

2 Select **Entity** and click **OK**. The Station UI is updated.

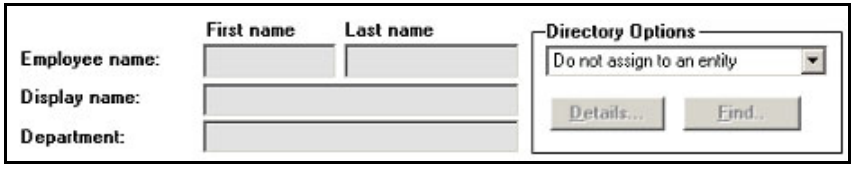
End of Procedure

Do not assign to an entity

Procedure 74
Do not assign to an entity

Select **Do not assign to an entity** from the Directory Options drop-down list and click **OK** (Figure 168).

Figure 168
Station UI-No assignment



End of Procedure

Key Assignments

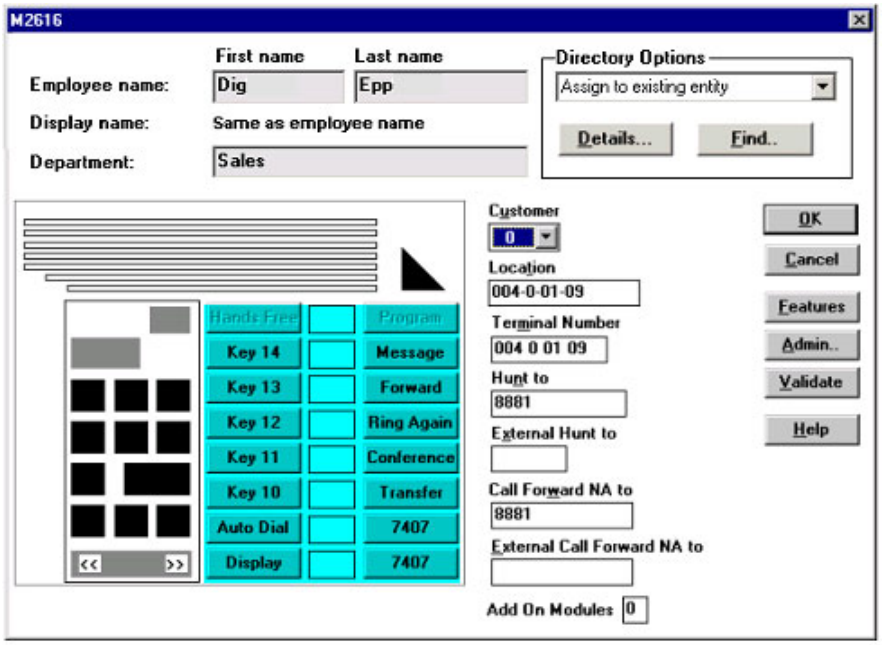
In addition to the data fields, the set may have keys to which you can attach feature functions.

Procedure 75
Assigning feature functions to a key

To assign feature functions to a key, complete the following procedure:

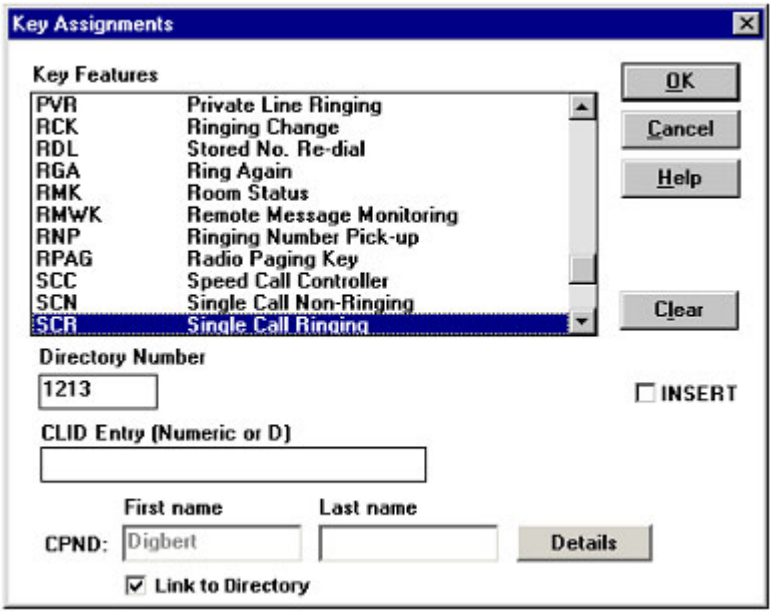
1 From the keypad, select a key displayed on the select a key (Figure 169).

Figure 169
Key assignments



2 The Key Assignments dialog box containing a single-selection scrollable list of Key Features appears (Figure 170). The features listed are defined for this set using the Features button on the station data dialog box. The CPND name and Link to Directory checkbox are added to the dialog where the key type is selected.

Figure 170
Key Assignments dialog box



3 Choose one of the following:

a. Select a Key feature from the list. The currently selected feature is highlighted. Select using the mouse or the up/down arrow key.

Selecting a key feature can display text entry boxes. You can double-click on a DN text entry box to display the list of DNs in the customer's Numbering Plan that are available to the selected feature. For more information, see “Directory Number assignment” next.

b. Enter additional information, as required by the Key feature text entry box.

c. Click **Details** to display CPND dialog box

d. Select **INSERT...**

The dialog box has a Clear button that you can use to remove any feature attached to the selected key on the set (to assign a different feature, it is not necessary to first clear the current feature). You may also enter the first letter of the Key Feature of interest to move to that section in the list.

e. Select **OK** to update the station data.

Click **Cancel** at any time to return to the station data dialog box without changing the current key assignment. Click OK to assign the selected feature to the key

To update the station data for more than one station, proceed to Global Update.

End of Procedure

Directory Number assignment

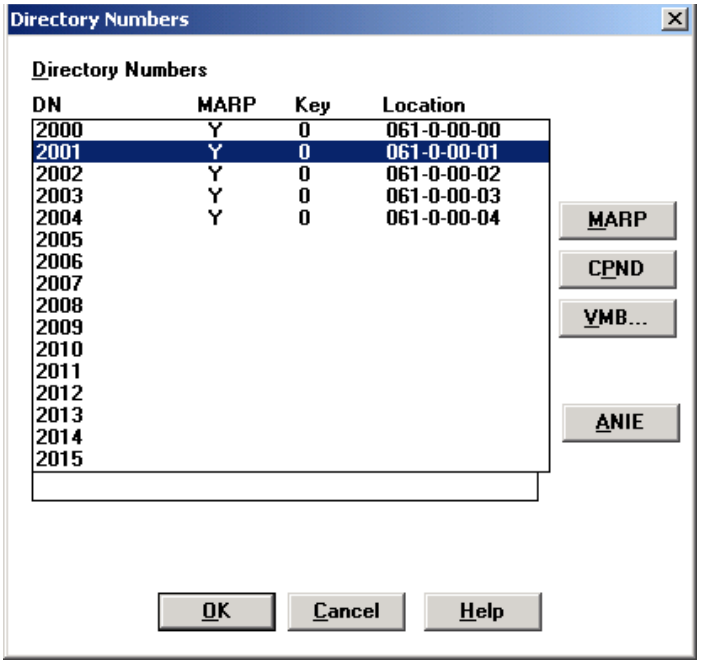
There are three kinds of DNs:

- A DN assigned to the station. This must be in the customer's Numbering Plan as defined for the system.
- A DN referred to by this station (message center, for example) that must be in this customer's Numbering Plan.
- A DN referred to by this station (Call Forward, for example) that can be the number for any station—external or within the Numbering Plan.

To enter a DN for a selected station, you can type the number into the Directory Number field or double-click within the Directory Number field to select from a list of DNs used in the Numbering Plan for the customer (Figure 171).

A manually entered number for DN categories 1 and 2 above will not be accepted if it is not contained in the Numbering Plan, unless the Numbering Plan validation has been turned off (**Options > Global Preferences > Validation**).

Figure 171
Directory Numbers dialog box



If you are assigning a DN to this station (versus referring to the DN of another station as in forwarding or hunting options), the dialog box allows functions in addition to the usual Cancel, Help, and OK buttons:

- **MARP**: If the assigned DN is being used by another station you can assign incoming calls to that DN to this station with the Multiple Appearance Redirection Prime (MARP) button. To assign incoming calls to the other station, you must update the other station and select the MARP function there. This button toggles the current MARP assignment.
- **CPND**: A Call Party Name Display (CPND) display dialog box allows you to define how calls from this station are displayed to the receiving station. See "CPND data considerations" on page 399
- **VMB**: A Voice Mailbox (VMB) display dialog box allows data to be associated with a DN (which serves as a mailbox ID) rather than a TN. You can modify the VMB data from any station that has an appearance of the mailbox DN. Refer to "Voice Mailbox" on page 437.

The dialog box contains a single-selection list of DNs defined in the numbering plan for this system. Those numbers that are already assigned also have MARP and Location

data listed. The currently selected DN is highlighted. If you are assigning a DN to this station, the dialog box also contains a display-only box with the current DN assignment entered.

At any time, click **Cancel** to return to the previous window without changing the current assignment.

Click **OK** to assign the DN and return to the previous window.

Terminal Number assignment

The Terminal Number (TN) is the full hardware address of the port to which this station is attached. If the Terminal Number field requires an entry, you can type the number into the Terminal Number field, or you can double-click within the field and select from a list of available TNs. The data entry must be in the following format:

lll s cc nn

where:
lll = The number of the loop
s = The number of the system shelf
cc = The number of the shelf card position
nn = The number of the card circuit (unit)

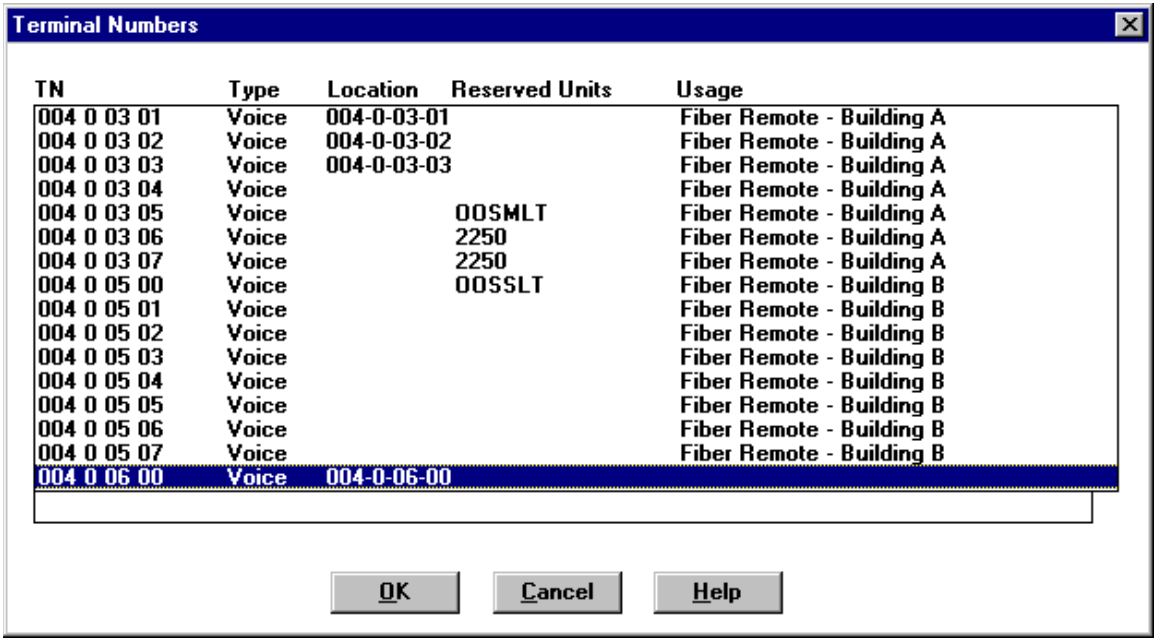
For Small Systems, the TN format is:

cc 0 0 nn

The range of numbers available depends on the hardware configuration and software release in use at the system.

The list shows the Location for all TNs that are already assigned (Figure 172).

Figure 172
Terminal Numbers window


Terminal Numbers
TN
Type
Location
Reserved Units
Usage
004 0 03 01 Voice 004-0-03-01 Fiber Remote - Building A
004 0 03 02 Voice 004-0-03-02 Fiber Remote - Building A
004 0 03 03 Voice 004-0-03-03 Fiber Remote - Building A
004 0 03 04 Voice Fiber Remote - Building A
004 0 03 05 Voice OOSMLT Fiber Remote - Building A
004 0 03 06 Voice 2250 Fiber Remote - Building A
004 0 03 07 Voice 2250 Fiber Remote - Building A
004 0 05 00 Voice OOSSLT Fiber Remote - Building B
004 0 05 01 Voice Fiber Remote - Building B
004 0 05 02 Voice Fiber Remote - Building B
004 0 05 03 Voice Fiber Remote - Building B
004 0 05 04 Voice Fiber Remote - Building B
004 0 05 05 Voice Fiber Remote - Building B
004 0 05 06 Voice Fiber Remote - Building B
004 0 05 07 Voice Fiber Remote - Building B
004 0 06 00 Voice 004-0-06-00
OK
Cancel
Help

The dialog box contains a single-selection list of TNs defined in the Station Hardware view that permit access to the set defined for this station. The current selection is highlighted.

At any time, click Cancel to return to the previous window (Set dialog box) without changing the current assignment. Select a TN and click OK to assign the TN and return to the set dialog. The OTM system validates the TN for availability and permissibility using the Hardware assignments stored under the Station Hardware view, and assigns the TN.

Automatic TN Assignment will not assign any units in the Hardware View that are marked as a RUT. See “Reserve TN feature” on page 380.

Reserve TN feature

This feature allows users to assign TNs to support instrument types on a station line card and mark these units as reserved for a given unit type. These types, referred to as Reserve Unit Type (RUT), include the following:

- ATT (Attendant Console)

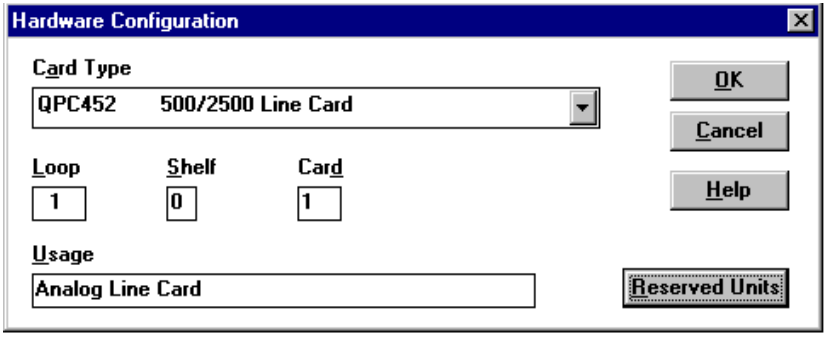
- 1250 (1250 Digital Attendant Console)
- 2250 (2250 Digital Attendant Console)
- OOSSLT (Out of Service Single Line Terminal)
- OOSMLT (Out of Service Multiple Line Terminal)
- PWR (Power for Attendant Console)
- OTHER (as defined by the user)

When a unit is reserved as one of these types, it is not assigned during Automatic TN Assignment and appears in the TN Selection List Box accordingly. The Automatic TN Assignment will not assign any units in the Hardware View that are marked as a RUT. RUTs are validated at the field and global levels. RUTs are marked by the user in the Hardware View and by the Station Retrieval Module. The Reserve TN feature shows existing Usage Fields at the card level in the Hardware view.

Reserved Units TNs are skipped during Automatic Terminal Assignment.

To access the Reserve Units dialog box, click **Reserve Units** in the Hardware Configuration dialog box (Figure 173).

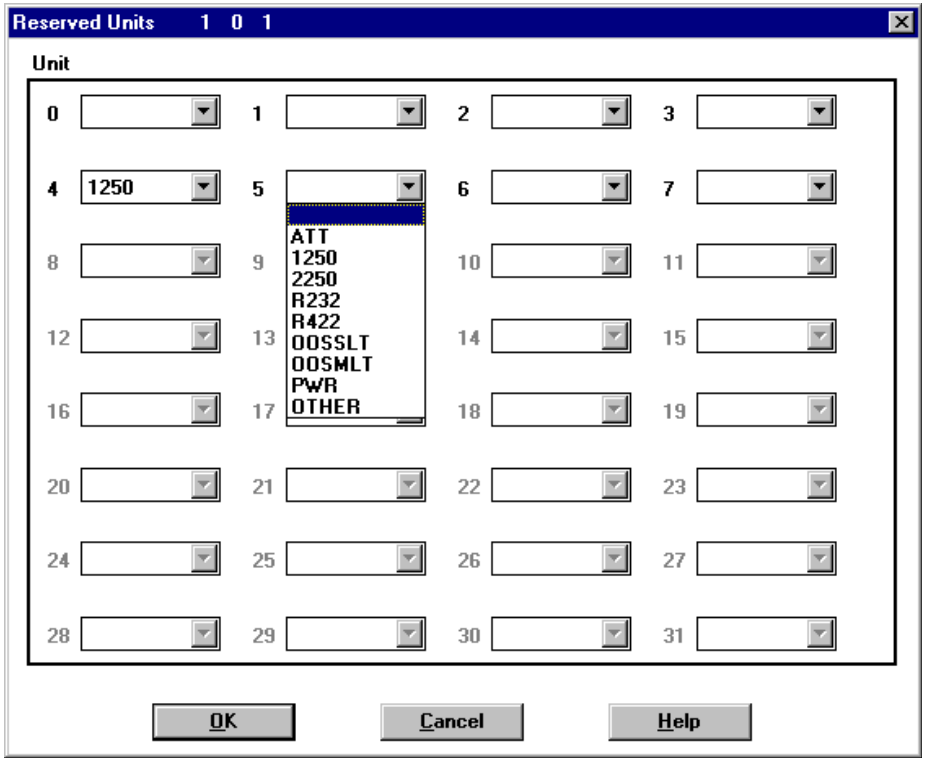
Figure 173
Hardware Configuration dialog box



The Station Retrieval Module recognizes RUTs and updates the Reserved Units fields in the Hardware View with the RUT value during an initial retrieval. Discrepancies are handled in the same way as other retrieved fields with the value overwriting the OTM database value. RUTs do not appear in the Retrieval Specify by Type field since they are not treated as Station Types.

Use the Reserve Units dialog box to assign RUTs (Figure 174).

Figure 174
Assigning values in the Reserved Units dialog box

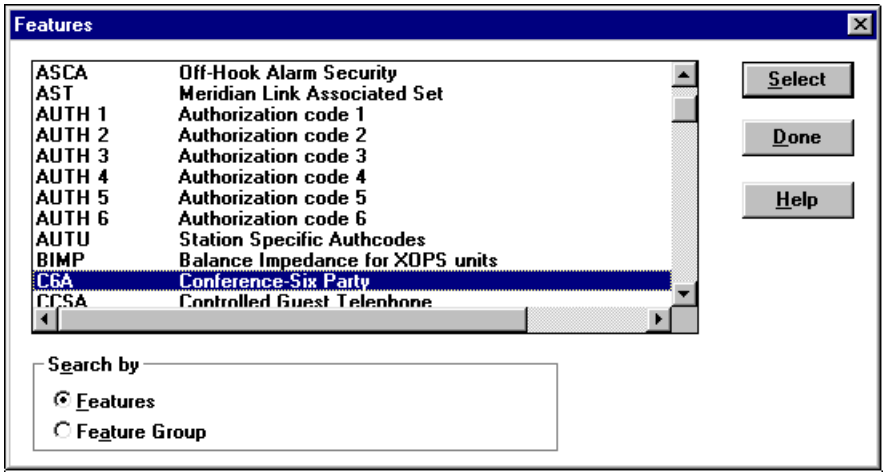


Features button

The Features button is located in the Station Data dialog box Figure 161 on page 366.

Click **Feature**s to open the Features dialog box (Figure 175). The Features dialog box lets you examine and update station features and options defined for your system. This is the function you use to assign a value to the DES field in OTM. It allows you to set feature key assignments. The Features dialog box contains a single-selection list of features or feature groups that you can scroll.

Figure 175
Features dialog box



Select the appropriate radio button to sort by either Features or Feature Groups. “Features” sorts the features alphabetically by mnemonic. “Feature Groups” organizes the features into related categories.

The dialog box contains Select, Done, and Help function buttons. Help appears online Help for this dialog box. Done returns to the station data dialog box, and Select appears a dialog box associated with the selected feature. Use the feature dialog box to define parameters for the feature and assign the feature to a key.

Use one of the following methods to select a feature:

- Select a single feature with a mouse click.
- Use the arrow keys to move the highlight bar to the desired feature.
- Type the first letters of the feature mnemonic (for example, SCR).
- Click and drag the highlight bar to the desired feature.

Use the Page Up and Page Down keys to browse the feature list.

When you click Select, OTM appears a dialog box for the selected feature. You can enter data in the dialog box. When you click OK, OTM modifies the feature based on your input, and returns to the Features list.

While the Features list is open, you can examine and modify other features.

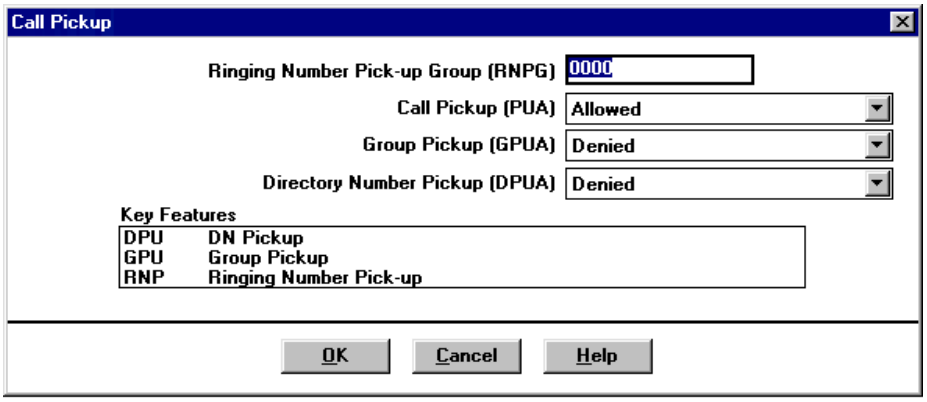
When you finish modifying features, click **Done** to return to the Station Data dialog box (Figure 161 on page 366). The keys that you assigned are labeled appropriately.

When you are finished defining or examining features, click **Done** to return to the Station Data dialog box. If you have assigned keys, the appropriate keys are labeled in the Station Data dialog box.

Feature Group category

Select **Search by Feature Group** and choose **Select** in the Features dialog box. A dialog box to configure the selected feature appears. The dialog box shown in Figure 176 is for the Call Pickup feature. The other dialog boxes are similar in appearance.

Figure 176
Feature dialog box (example)



The dialog box contains fields (usually text boxes associated with drop-down selection lists) that define the functionality of the feature. If the feature can be assigned to a key, the dialog box also contains a Key Features list of functions that can be assigned to a key for this feature.

Forced targets

Some entries in the Feature dialog box will force a change in the Class of Service (CLS) of the selected station. For example, filling in the “Flexible Call Forward No Answer DN (FDN)” field of call redirection forces “Call Forward No Answer (FNA) to “Allowed”. This target enforcement occurs only when the feature dialog box is exited.

Key Features field

You can make key assignments only to sets with feature keys. Key assignments cannot be made to Type 500 or 2500 stations.

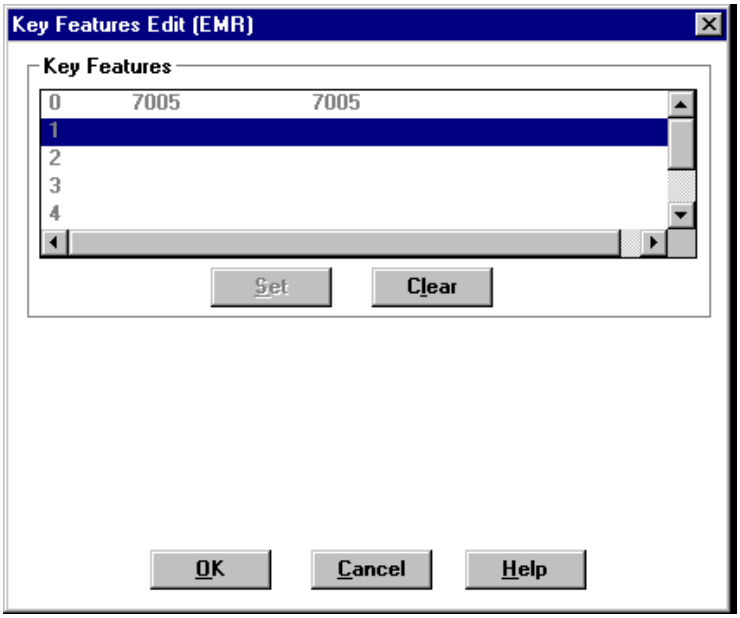
The Key Features field is a single-selection list of features associated with this feature group. You can assign the function selected in this list to a key for the selected station.

You assign features to a key from the Key Assignments dialog box.

To open the Key Features Edit dialog box (Figure 177) for the selected function, double-click the desired function in the Key Features list of the Features dialog box .

The dialog box shows a single-selection list of key numbers. Each key in the list shows any already-assigned feature (and associated DN, if applicable). The list is dimmed except for any assignment made during this session.

Figure 177
Key Features Edit dialog box



The Key Features section of the dialog box contains two function keys, Set and Clear. If the selected key is already assigned, the Set function is dimmed. Use the Clear function to remove a key assignment. Use the Set function to assign the current feature to an unassigned key.

To return to the Features definition dialog box without changing the current key assignments at any time, click **Cancel**.

To assign key function and return to the Features Definition dialog box, click **OK**.

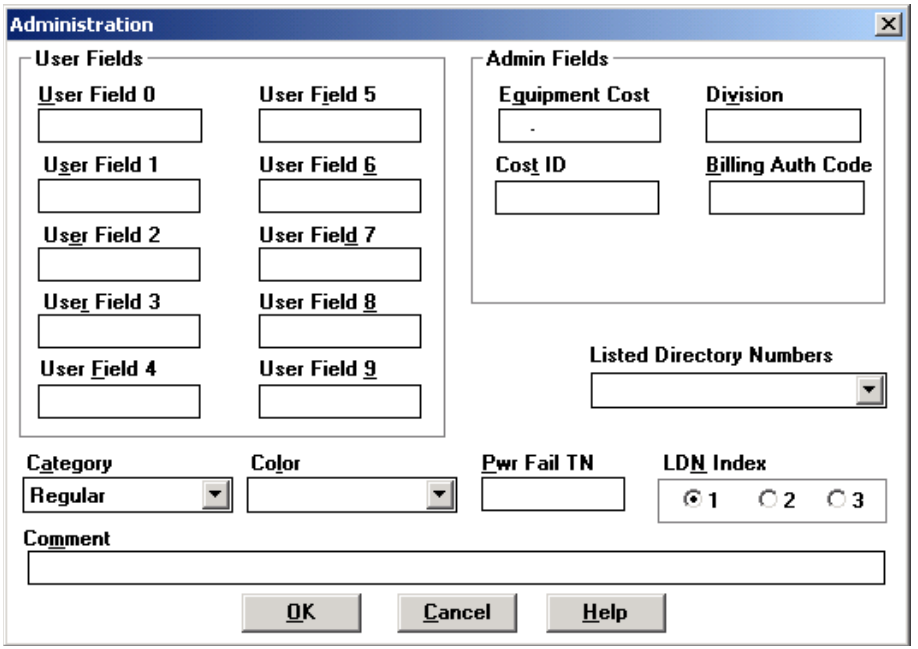
Administration

To open the Administration dialog box, click **Admin** in the Station Data dialog box (Figure 167).

The Administration dialog box (Figure 178) allows you to assign values to fields that OTM uses in classifying and administering station data. These fields are not part of the system data block.

To assign the user fields and their labels, select **Edit > User Field Names**. These headings allow you to define values for your own situation. This option contains text boxes so that you can assign specific values to these fields for this station.

Figure 178
Administration dialog box



The data entry fields in this dialog box include the following:

Category: A drop-down list of line connection types for this station.

Color: A drop-down list of colors available for this instrument.

Pwr Fail TN: A text box for the TN used if the system power fails.

LDN Index: Radio buttons to define which of three indexes contains the DN for this station. A DN index is set up at the system level when the Numbering Plan is defined. The index is used while viewing and printing designation strips for this instrument.

Admin Fields: The Admin fields are used by the Telecom Billing System (TBS) database for billing purposes and other types of cost allocation. Refer to *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331) for information on the TBS application.

Designation Strips

A telephone can have many features and services available by function buttons (keys) and indicators. A Designation Strip is a printout of labels that can be attached to the telephone to indicate the function of the various buttons and indicators on the set (and also the DN of the station using the set). You can create files that let you examine and print Designation Strips created from the data defining the stations using File > Desig. Strip.

A Designation Strip typically contains the DN for a single line set. In addition, sets with key caps that designate a DN (for multi-line sets) or reference other DNs also appear in the Strip.

Designating Directory Numbers

A station can have up to three listed directory numbers (LDN). The Numbering Plan defines whether ranges of directory numbers (DN) are set for direct inward dialed (DID). Typically, a station DN, as defined for the Designation Strip, is a regular 10-digit telephone number with an extension:

```
(aaa) xxx-aaaa Ext bbbb
```

where:

aaa	Represents the area code
xxx	Represents the exchange
aaaa	Represents the number
bbbb	Represents the extension

The Designation Strip utility examines the System Configuration Customer data to determine the LDN used by the station. The utility determines whether the station DN is in a DID range defined in the system Numbering Plan. The following are the two possible results:

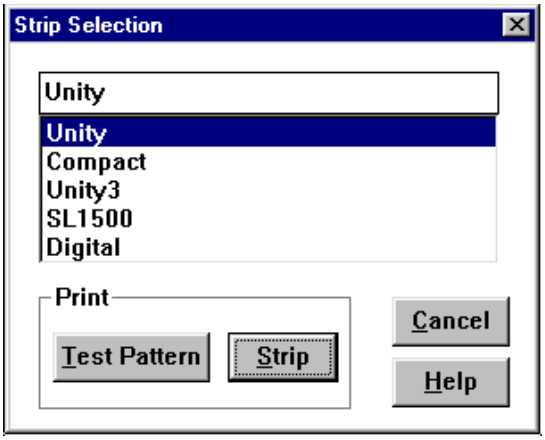
Non-DID number: The Strip prints the LDN and uses the station DN for the extension.

DID Number: The Strip gets the area code (aaa) from the LDN, the exchange (xxx) from the DID number, the number (aaaa) from the station DN.

Display of Designation Strips

To open the Strip Selection dialog box, from the Station list window, select **File > Desig. Strips** (Figure 179).

Figure 179
Strip Selection dialog box



The dialog box contains a single-selection scrollable list of Designation Strip types created by OTM. The current selection is highlighted. Cancel returns to the Station list window. Help appears online Help for the dialog box. Test Pattern sends a single page dummy strip to the Viewer. Use this to print on the appropriate form and ensure that the form is aligned correctly in the printer. Strip sends Strips for stations selected in the Station Configuration view to the OTM Viewer.

To print the strip, from the Viewer window, select **File > Print** from the menu bar.

Designation Strips are printed on special forms. The following separate form layouts are used by OTM:

- Unity For Unity 1 and Unity 2 sets
- Unity 3 For Unity 3 sets
- CompactFor older SL-1 type sets
- SL-1/500For normal SL-1 and analog type sets
- Digital/IP Phones For digital sets and IP Phones

Station data validation

DES

The DES field is a required field for station data residing on the system. It is possible to create station data within OTM that has no DES field value (this 1–6 character designator value can be assigned through the Administration feature of the Features function in Station Administration). In such cases, OTM attempts to assign the first 6 characters of the Location value to DES. If this value contains non-alphanumeric values OTM leaves the DES field blank (location can contain all Windows-acceptable characters, but DES can have only letters and numbers).

Any station with no DES value causes an error during transmission of OTM data to the system. The Validation utility checks the DES and any other field values that can cause transmission failures. Refer to “Station data validation” on page 389.

Station data retrieved from a system always has a DES value.

The station database contains one record per station. Some of the field values in a record depend on the system properties, the instrument used, and which features and options are enabled. In addition, the OTM application contains “rules” that define possible values, sizes, and ranges for the fields.

The Station Administration module includes a Validation utility that checks that the values assigned to certain fields are compatible with the configuration and the OTM data rules.

The Validation function checks the currently selected station records in the Station list view before uploading to the system. There are two options—partial and full validation. Full validation checks every field and may require considerable time.

You can validate the data for each station individually using the Validate function key on the set dialog box. This button examines the entries for the current open station only. Any errors are noted. Perform a Station Validation to capture any data entry issues that may result in a transmission error when synchronizing with the system.

Validating the data

Select the stations for validation in the Station list view and choose File - Validate to display a cascading submenu. Choose Partial (checks the values defined previously) or Full (checks all field values) to start the Validation check.

While OTM performs the checks, a status box indicates progress in single record increments. At any time, click Cancel in the status box to halt the task.

Click Cancel to discard the validations already completed.

When the task is complete, the OTM Viewer appears the validation data. You can save this to a text file (in a user-defined file name and location), print it, or simply browse and discard it (see "Generating reports" on page 495 for a description of the Viewer).

When the task is complete, you should send all the new or modified station and CPND information to the system. You may select all of the NEW or CHG stations, for example. You should apply the Validation process from the File menu to the selected stations to ensure that the entered data is consistent across all stations. See "Enabling communications: synchronizing" on page 454.

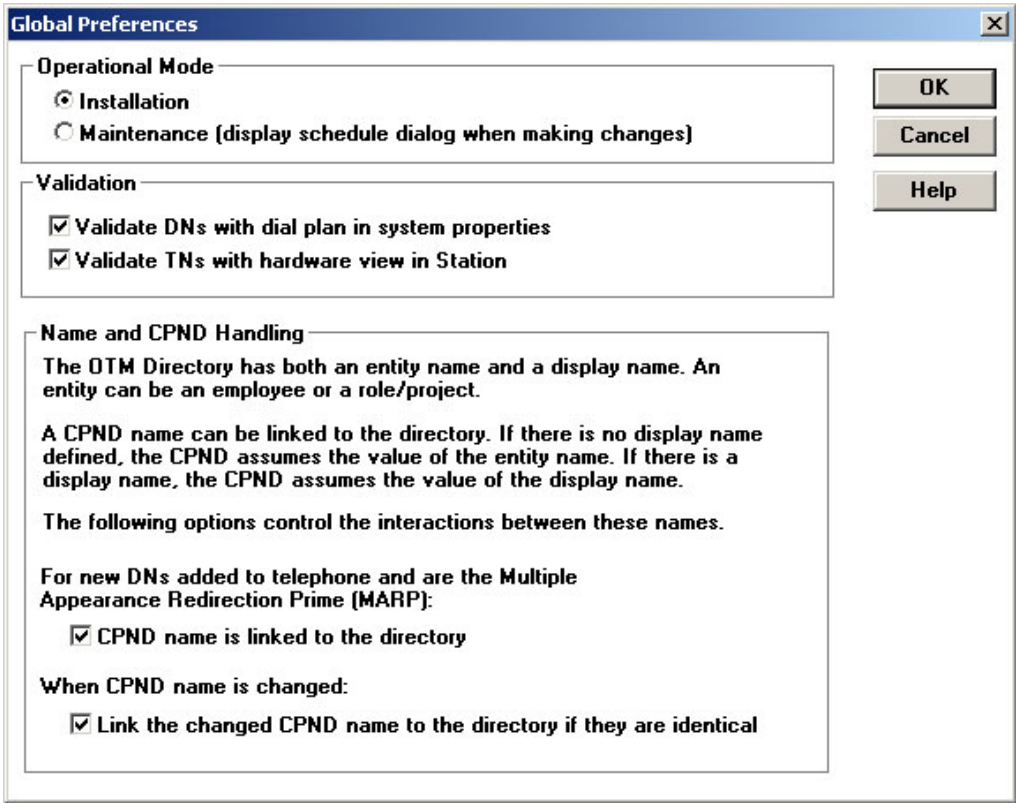
Setting a Global Preference

To accommodate different user needs, a global preference setting can be defined on a per-system basis

Procedure 76
Setting a global preference

1 From the Station Administration window, select **Options>Global Preference**. The Global Preferences dialog box appears

Figure 180
Global Preferences dialog box


Global Preferences
Operational Mode
Installation
Maintenance (display schedule dialog when making changes)
Validation
Validate DNs with dial plan in system properties
Validate TNs with hardware view in Station
Name and CPND Handling
The OTM Directory has both an entity name and a display name. An entity can be an employee or a role/project.
A CPND name can be linked to the directory. If there is no display name defined, the CPND assumes the value of the entity name. If there is a display name, the CPND assumes the value of the display name.
The following options control the interactions between these names.
For new DNs added to telephone and are the Multiple Appearance Redirection Prime (MARP):
CPND name is linked to the directory
When CPND name is changed:
Link the changed CPND name to the directory if they are identical
OK
Cancel
Help

2 Select one or more of the following settings for the system:

a. Installation mode for setting up or reconfiguring Station Administration.

b. Maintenance mode for the synchronization of Station data.

c. Validation DNs to perform validations against the Site Numbering Plan.

d. Validation TNs to perform validations against the Hardware configuration.

e. CPND name is linked to the directory to set default behavior for new DNs.

f. Link the changed CPND to the directory if they are identical to set the behavior for CPND changes using overlays.

End of Procedure

Call Party Name Display

CPND overview

Call Party Name Display (CPND) appears the name of the calling party of an incoming call to the called station user. The CPND data is associated with a DN, and not with any particular station. If CPND data is assigned to a DN, it may be associated with multiple stations.

For OTM to have CPND functionality on a specific system, Package 95 (Call Party Name Display) must be enabled on the system.

The CPND Administration module is separate from the Station Administration module. CPND Administration lets you create, maintain, change, and report on single- and multi-line CPND information. CPND Administration data defines the setup for each customer's CPND configuration and CPND Name data defines the display parameters for DNs used by a particular customer. Station configuration data and CPND data are separate within the system and are treated as separate files within OTM.

CPND is provided as a separate module to allow you to directly enter CPND data for DNs, Dial Intercom Groups, or DNIS IDC. CPND data can be accessed directly from the CPND Administration module or through the Station Administration module (see "CPND module").

Terminology

This section defines terms that is useful in understanding CPND.

CPND name

Calling Party Name Display information that is used in LD 95, LD 10, and LD 11 on the PBX. This is also the name information that is contained in OTM's CPND application.

The name captured in LD 10, LD 11, or LD 95 on the PBX is the CPND name on the telephone. A Display Name attribute is associated with an Employee Editor record;

however, it is not necessarily the same as First Name and Last Name in the Employee Editor, and it could also be different from the CPND name for a given DN.

The CPND name appears in the CPND application and as the Display Name attribute in the Employee Editor if there is only one DN and the Link To Directory check box is selected. The employee name appears in Station Administration indicating the owner of the DN and in the First Name and Last Name fields in the Employee Editor as the proper name for the employee. The First Name and Last Name can be synchronized with a corporate LDAP server. The master repository for the employee name will usually be the corporate LDAP server; however, the information for the Display Name attribute for an employee may come from either the corporate LDAP server or from OTM.

Display Name

A single display name is associated with an employee and can be synchronized with a corporate LDAP server. If an employee has more than one DN, and there are different display names associated with each of the DNs, then either none or only one of the names is shown as the Display Name attribute of the Employee Directory. The name that appears as the Display Name attribute is taken from the entry in the CPND application that has the Link To Directory check box selected. To view the display name in the Employee Directory, click the Additional Info tab, and select Display Name in the attributes list.

Employee Directory

Employee Directory refers to the database of employee information.

Employee Editor

The user interface to the Employee Directory is referred to as the Employee Editor. Employee Directory and Employee Editor are used interchangeably to indicate the employee database information.

Employee name

The employee name is the created from the First Name and Last Name fields that appear in the Employee tab of the Employee Editor. This is the name of the owner of the telephone.

Employee

An employee is a user of assets on a PBX. An employee will have one employee name and either none or only one Display Name attribute. An employee may have a different CPND name for each DN. However, for every DN that has the Link To Directory check box selected, the CPND name matches the Display Name attribute.

Link To Directory

In the CPND application, if the Link To Directory check box is selected, OTM will pull the Display Name attribute from the Employee Editor and use this name as the CPND name for the DN. If the Link To Directory check box is cleared, OTM allows the CPND name for the DN to be different from the Display Name attribute for the employee that owns the DN.

Using overlays

Nortel recommends that you not use the overlays to make changes to Class of Service, features, and keys. Before the changes entered through the overlays are reflected in OTM a synchronization with OTM would be required.

The overlays can be used to modify certain telephone features without modifying names; however, modifying names in the overlays or performing moves, adds, or changes using the overlays will cause the Link To Directory check box to become cleared. This is manageable only if there is a process in place to record the changes and manually update OTM later, or if you do not want the CPND name to be reflected in the Display Name attribute or the employee name. In this situation, the CPND name (the name appearing on telephone appears) will be different from the employee name in Station Administration and in the Employee tab of the Employee Editor.

Telephone changes, other than a change to name information, may be made through the overlays and then synchronized to pull the information into OTM. If you choose to make changes to the CPND name using the overlays you will need to develop and follow an appropriate process to resynchronize the data in OTM as necessary.

How names are populated in OTM

Names are populated in OTM using one of the following three methods:

- By retrieving telephone information from the PBX for telephones that are not defined in OTM
- By adding new CPND names using the CPND application
- By retrieving CPND names from the PBX using the CPND application

Retrieving telephone information from the PBX

Retrieval of the telephone information takes place in two phases. First, a command is issued to write the TNB data block information to a file, and then the file is parsed to update the OTM database.

While parsing the telephone information, OTM will search from Key 0 onwards to locate the first multiple appearance DN with MARP set to yes. This is the MARP DN. The CPND name associated with this DN is used to search the Employee Editor database for the first employee with a matching Display Name attribute, and the telephone is assigned to this employee. If no match is found, OTM next searches for a matching First Name and Last Name, and the telephone is assigned to this employee. If there is still no match found, OTM will create a new employee record and assign the telephone to this employee. When the new employee is created, the CPND name information is also entered into the Display Name attribute and in the First Name and Last Name fields in the Employee Editor.

If the telephone does not have any MARP DNs, the CPND name information for the Primary DN (Key 0) will be used to determine the owner of the telephone.

If the telephone does not have MARP DNs or a Primary DN, the telephone will not be assigned to any employee.

For ACD telephones, OTM does not use the CPND name associated with the ACD DN to form employee names in the Employee Editor. OTM will ignore the ACD DN and use the next MARP DN on the telephone.

Adding new CPND names

When you add a new telephone with a CPND name by using the overlays and then synchronizing with OTM, the telephone is added to Station Administration. The name is added to the CPND application and may also be added to the Employee Editor in both the Employee Name and Display Name fields.

You can directly add the CPND name for a DN using the CPND application. If the DN is associated with an employee in the Employee Editor, and there is no Display Name attribute for the employee, you can type the name into the First Name and Last Name Fields in the CPND Name dialog box and select the Link To Directory check box. This will automatically populate the First Name and Last Name attributes in the Employee Editor with the CPND name once you click OK in the CPND Name dialog box.

Retrieving CPND names from the PBX

Changing a CPND from within the PBX *never* changes the display name. If CPND is changed using the overlays, then:

If the changed CPND is linked to the directory in OTM the link is broken when OTM retrieves the changed CPND,

or

If the new or changed CPND is the same as the display (or entity name if display name is blank), then OTM links the CPND to the Directory if specified in the Global Preferences.

You can retrieve CPND names from the PBX using the CPND application. From the System Window for the desired system, double-click CPND (which is located under Stations in the navigation tree) to launch CPND Administration. From the CPND Administration window select Synchronize > Retrieve. You can retrieve all records or specify the records you want to retrieve. If the DN is associated with an employee in the Employee Editor, the Link To Directory check box will be available in the CPND Name dialog box. This will allow you to determine whether or not the CPND name is propagated to the employee's Display Name attribute.

Modifying names in OTM

The following five activities will modify the various names associated with a telephone in OTM:

- Changing the owner of a telephone
- Changing the owner's name
- Changing the owner's Display Name attribute
- Retrieving modified CPND names from the PBX
- Changing CPND names using the CPND application

Changing the owner of a telephone

If you change the owner of a telephone by selecting a different employee in the Employee Editor, OTM analyzes all the CPND names associated with the multiple appearance DNs (MARP DNs) on the telephone. If the CPND names have the Link To Directory check box selected, the CPND names is updated with the name in the new owner's Display Name attribute.

Changing the owner's name

When you change an employee name using the Employee Editor, OTM automatically updates the Display Name attribute for the employee and the CPND names for all associated DNs that have the Link To Directory check box selected. This is also true when the employee name is changed as part of an LDAP synchronization. The reverse is not true, in other words, making a change to the Display Name attribute does not change the employee name.

Changing the owner's Display Name attribute

When you change the Display Name attribute for an employee, OTM automatically updates the CPND names for all associated DNs that have the Linked To Directory check box selected. This is also true when the Display Name attribute is change as part of an LDAP synchronization. The employee name in the Employee Editor does not change.

Retrieving modified CPND names from the PBX

If you change the CPND name on the PBX using the overlays, and the modifications are retrieved by OTM, the CPND name in OTM is updated with the new name. This will not change the employee name in the Employee Editor. OTM will clear the Link To Directory check box while changing the CPND name in the CPND application. Additionally, since the Link To Directory check box is cleared, the Display Name attribute associated with the employee is not updated.

Changing CPND names using the CPND application

You can change the CPND names independently using the CPND application. If the Link To Directory check box is selected, OTM does not allow you to change the CPND name, and the First Name and Last Name fields are read-only. When the Link To Directory check box is selected, these fields are populated by the information in the Display Name attribute in the Employee Editor, and you must clear the check box to proceed.

Changing a CPND from within the PBX *never* changes the display name.

- If CPND is changed using the overlays, then the changed CPND is linked to the directory in OTM. The link is broken when OTM retrieves the changed CPND.

  or

- If the new or changed CPND is the same as the display (or entity name if display name is blank), then OTM links the CPND to the Directory if specified in the Global Preferences.

Clearing the Link to Directory box

In the CPND Name dialog box (Figure 183 on page 404), when you clear the Link To Directory check box, the First Name and Last Name fields become editable.

After changing the data in these fields and exiting the dialog box, OTM modifies the Display Name attribute in the Additional Info tab of the Employee Editor if and only if

the employee's display name does not appear as the CPND name on another DN through the use of the Link To Directory check box for that DN.

When there is only one CPND name/DN combination (there is no other CPND name with Link To Directory checked which would lock the Display Name attribute for the employee), make the modifications in the CPND Name dialog box and click OK. OTM then selects the check box within the CPND application so that the next time the dialog box is opened the Link To Directory check box is selected. At this point, the CPND name in the CPND Name dialog box and the Display Name attribute in the Additional Info tab of the Employee Editor match. This activity has no impact on the First Name and Last Name fields in the Employee tab of the Employee Editor. They will remain as originally entered.

You can also access the CPND Name dialog box from within the Station Administration application by clicking the CPND button in the Directory Numbers dialog box. See Figure 171 on page 378.

It is possible to have more than two different names associated with the owner of a telephone in OTM if the Link To Directory is cleared. This occurs because, with the Link To Directory check box cleared, the CPND name does not necessarily match the Display Name attribute. With multiple DNs on the telephone, each DN that does not have the Link To Directory check box selected could have a unique CPND name. If the Link To Directory check box is selected in the CPND Name dialog box for all DNs on the telephone, then only two different names can exist in OTM: the employee name, and the Display Name attribute which is also propagated to the CPND name for all associated DNs.

Impact on names when deleting telephones

An OTM retrieval from the PBX uses the CPND name from the PBX as a reference to search for a matching employee by comparing the CPND name with Display Name attribute of the employees listed in the Employee Editor. By deleting all of the telephones belonging to an employee, and thereby deleting the Display Name attribute associated with the telephones, any subsequent retrievals from the PBX will handle the retrieved telephone information in the following manner:

- If a telephone that was just deleted in OTM is retrieved from the PBX, and there is no other employee with a Display Name attribute that matches the CPND name on the telephone, and the CPND name on the telephone matches an employee name in the Employee Editor, and this employee name is unique (there is only one occurrence of this employee name in the Employee Editor), the telephone is associated with the same employee.

- If a telephone that was just deleted in OTM is retrieved from the PBX, and there is no other employee with a Display Name attribute that matches the CPND name on the telephone, and the CPND name on the telephone does not match any employee name in the Employee Editor, a new employee entry will be entered in the Employee Editor and the telephone will be associated with the new employee. In this instance, the CPND name from the retrieved telephone is entered as the employee name and the Display Name attribute in the Employee Editor.
- If a new telephone has been set up on the PBX with a CPND name, during the retrieval the CPND name is first compared to the Display Name attributes in the Employee Editor. If there is no match found, the CPND name is compared to the employee names in the Employee Editor until the first match is found. When a match is found, the telephone will be associated with the matching employee. If no match is found, a new employee entry is entered in the Employee Editor and the telephone is associated with the new employee. In this instance, the CPND name from the retrieved telephone is also entered as the employee name and the Display Name attribute in the Employee Editor
- If a new telephone has been set up on the PBX without a CPND name, then no new employee entries are created in the Employee Editor, and the telephone is only established within the Station Administration application.

CPND data considerations

You should be aware of the following considerations when using the CPND Administration function of Station Administration.

- The name defined for CPND need not necessarily be the same as that defined for a station end user on the face of the station graphic. If the station asset is assigned to an Employee, then the Employee Editor first/last name appears in the station administrator interface. The name stored by OTM is the CPND associated with a particular DN.
- In most cases, the name on the station graphic is also the name associated with a DN of the station. OTM can automatically link the name on the graphic with one or more of the DNs on the station. To link the name on the graphic with a DN, select the Link To Directory check box in the CPND Name dialog box.
- Change in the name does not change the sync status of the station record.
- If the name change changes the CPND name, this change appears in the RPL and CUR record in the CPND module.
- If the name data is linked in this manner, the first and last names in the CPND Name dialog box are filled in and grayed. The data can only be changed from the station graphic. To remove the linkage, clear the Link To Directory check box in the CPND Name dialog box.

- The CPND Name information is accessed in either the Station module (from a CPND function button in the DN list dialog box) or the CPND module. All CPND data is synchronized with the system in LD 95.

CPND synchronization

CPND and Station synchronization are separate functions. In installation mode, you must synchronize CPND data separately from within the CPND module.

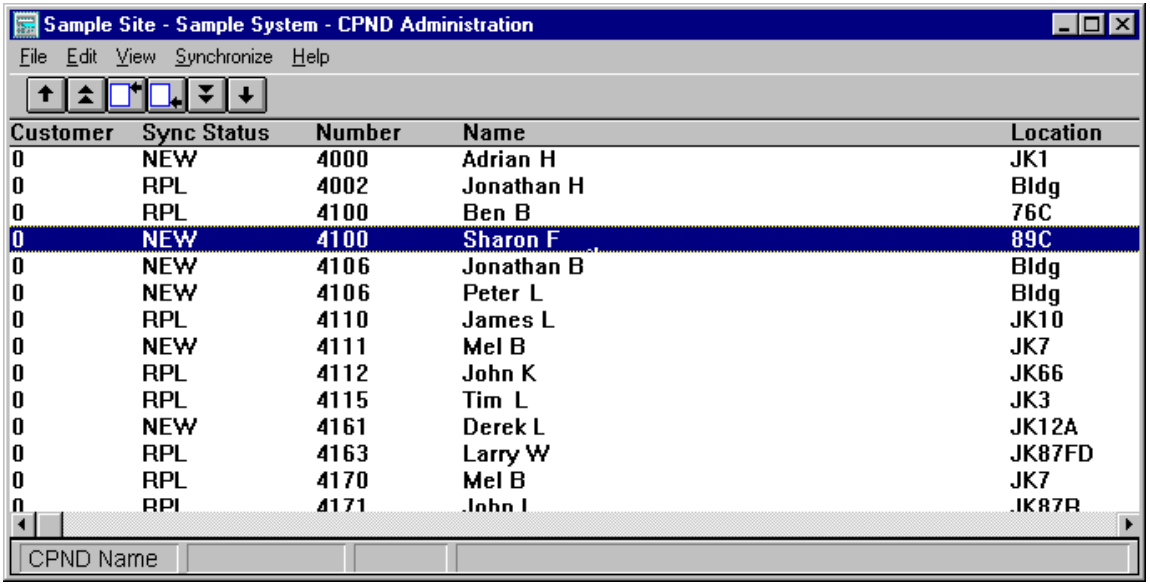
Changes made to CPND through the web are not transmitted automatically even in Maintenance mode.

CPND module

The OTM CPND Administration module allows access to the CPND data for a single system. When you open the CPND module, a list of name data contained within OTM appears. If the data has not yet been retrieved from the system, or added to the OTM database, the window contains no data.

Figure 181 shows the OTM CPND Administration window as it first appears.

Figure 181
CPND Administration window


Sample Site - Sample System - CPND Administration
File Edit View Synchronize Help
Customer Sync Status Number Name Location
0 NEW 4000 Adrian H JK1
0 RPL 4002 Jonathan H Bldg
0 RPL 4100 Ben B 76C
0 NEW 4100 Sharon F 89C
0 NEW 4106 Jonathan B Bldg
0 NEW 4106 Peter L Bldg
0 RPL 4110 James L JK10
0 NEW 4111 Mel B JK7
0 RPL 4112 John K JK66
0 RPL 4115 Tim L JK3
0 NEW 4161 Derek L JK12A
0 RPL 4163 Larry W JK87FD
0 RPL 4170 Mel B JK7
CPND Name

Accessing CPND data

The OTM CPND Administration window allows you to configure CPND blocks. After CPND blocks are configured, you can configure Name data for DNs.

From the View menu, the following list views for CPND data are available:

- Customer Configuration list (CPND Administration)
- Name display list (CPND Name)

The Customer Configuration list contains only a few items (just one in many cases). This view lists the CPND blocks configured on this system. The Name display list may have many items, probably more than will fit in the current window. This is the scrollable list of names whose display parameters are defined for CPND.

CPND Administration view

With View > CPND selected, the CPND Administration window appears the list of CPND blocks configured for the system. The following information is displayed for each customer:

- Customer: The customer number as defined in the system configuration
- Sync Status: The synchronization status of the station's data between the system and OTM

The data in the window is part of the CPND Administration data stored in OTM. The complete configuration data for this system is available as described in the CPND Data Change section of this document.

CPND Name view

With View > CPND Name selected, the CPND Administration window shows a list of names defined in the system. The following headings define the data for each station displayed:

- Customer: The customer number that uses this DN
- Sync Status: An indication of whether system data and the data in OTM are synchronized. The following list defines the status for CPND data:
  - **NEW**: CPND data defined in OTM that has never been uploaded to the system.
  - **TRN**: The CPND data is synchronized with system.

— **CHG**: Data has been changed in OTM but the change has not been sent to the system.

— **RPL**: Data defined in OTM to replace synchronized name data.

— **OUT**: Synchronized CPND data deleted from OTM but not yet removed from the system.

— **CUR:** The CPND data is synchronized with the system.

— **SWP:** Data defined in OTM to replace synchronized name data.

— Number: The DN using the CPND data

— Name: The defined CPND name

— Location: The optional unique station Location Code from the Station Data dialog box (see Figure 161)

From the CPND Administration window, select **View > Sort** to sort and display CPND records. Records can be sorted by the following:

- Directory Name
- Last Name
- First Name
- Sync Status
- Location

Recommended usage

You cannot build CPND Name data until the CPND data block is defined. First you must configure, or retrieve from the system, the CPND data block for the selected customer.

When the customer's CPND data block is defined, you can create, or retrieve from the system, the CPND Name display information.

CPND data change

You can change the data associated with the selected CPND view. The selected item in the list view is highlighted. Select an item using a mouse click, or use the up/down arrow keys to highlight the desired item. You can also double-click the desired item.

Select **Edit > Delete** to remove the selected CPND list item.

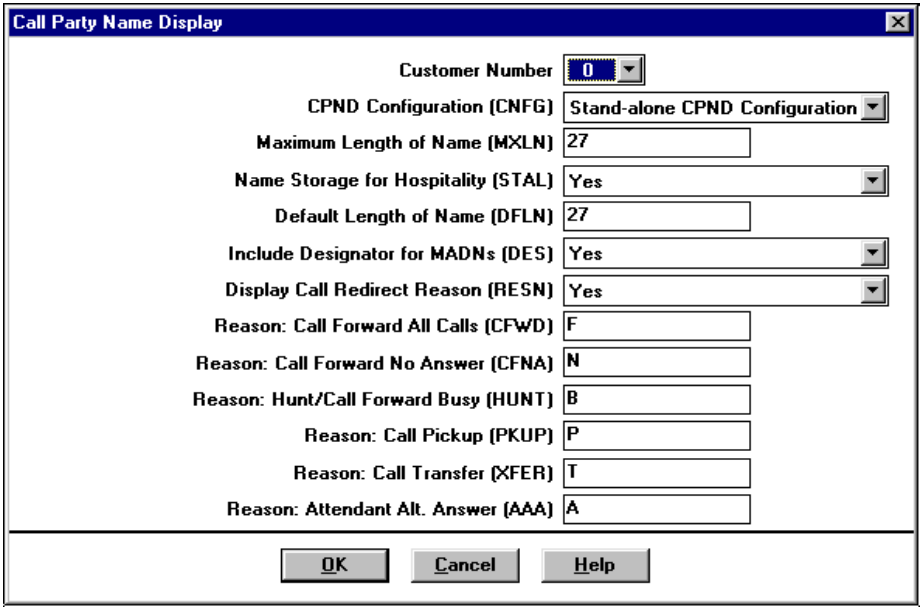
Select **Edit > Update or Edit > Add** to display a dialog box that allows you to update the data fields for the selected view or add a new CPND.

Updating the Customer Configuration data

Select **View > CPND**, to change the selected customer's CPND data. The selected CPND block is highlighted in the customer list window.

Select **Edit > Update** to display the Call Party Name Display dialog box (Figure 182).

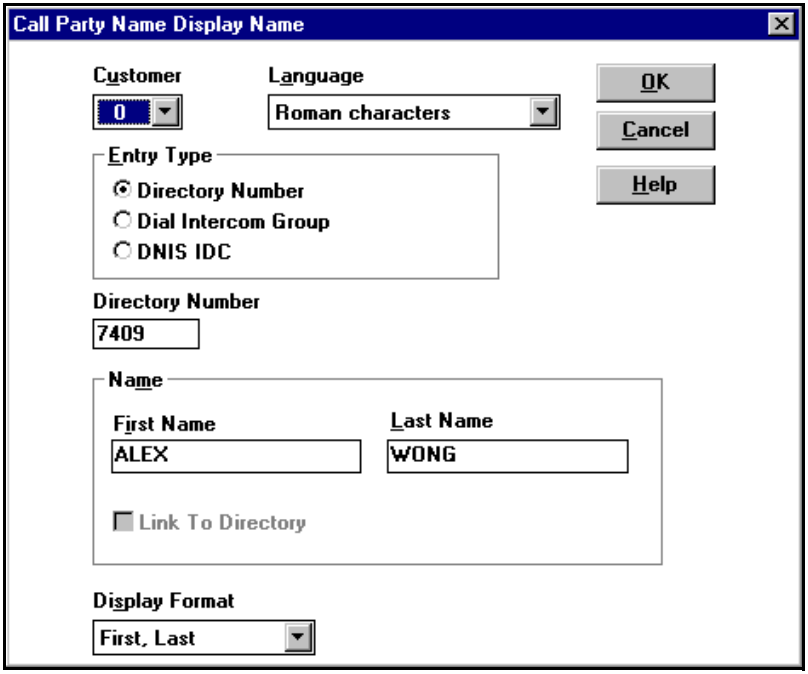
Figure 182
Call Party Name Display dialog box



Updating the Name display data

Choose **Edit > Update** in the CPND Name view window, or double-click the item in the list, to display the CPND Name dialog box for the selected station name (Figure 183).

Figure 183
CPND Name dialog box



The Link To Directory check box indicates that the CPND for this name is the Display Name of the Directory Entity that owns the set to which this DN is assigned. To modify this CPND, you must clear the Link To Directory box.

When the Display Name associated with a DN is removed from a set, the link to Directory is broken and the above box is clear.

List Manager

This section contains information about how to use List Manager. The List Manager module allows you to work with the following list types:

- Speed Call and System Speed Call—Allows a user to place a call to a telephone number by dialing a short code. These codes are managed as entries in a Speed Call list.
- Group Call—Allows a user to place a call to a list of DNs at the same time by pressing the Group Call key.

- Group Hunt—Allows the system to route an unanswered call to the next idle DN in a prearranged hunt chain (or list), based on the Group Hunting Pilot DN linked with the station's Prime DN.

The Group Hunt feature is not applicable to the North American market.

Summary of List Manager

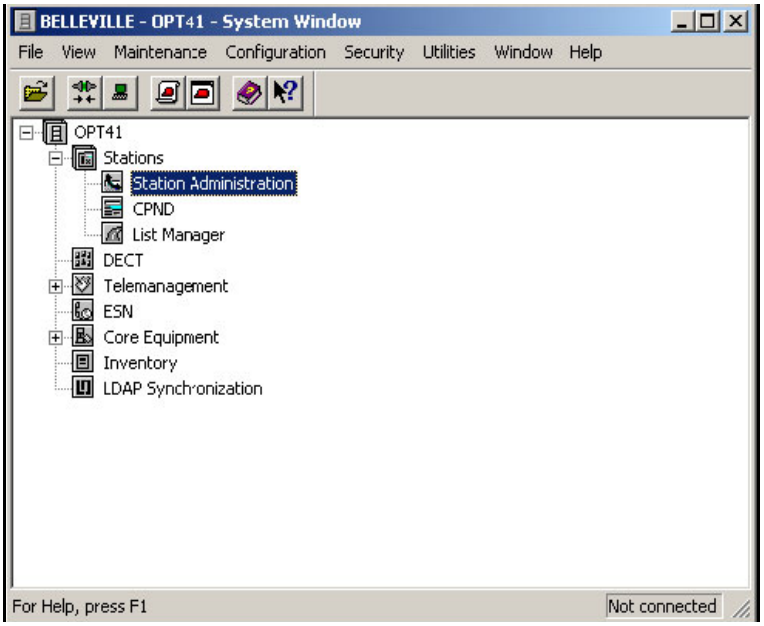
List Manager allows you to perform the following functions:

- Create and modify lists.
- Create multiple lists with one operation.
- Copy and paste lists from one system to another.
- Work with list templates.
- Set default properties for all lists of a given type.
- Assign a station to a list (In the Stations module you can assign a list to a station).
- Assign a Pilot DN to a list.
- Print reports on list usage.

Open List Manager

Figure 184 shows where to access List Manager from within the System Window.

Figure 184
OTM System Window



To open List Manager for a system:

1 From the OTM Navigator, open the system window for the selected system.

2 In the System window, open Stations.

3 Double-click the **List Manager** icon.

The List Manager window opens.

Download list data from the system

If list data is present on the system, download the list data to OTM the first time you open List Manager. You can synchronize each list type separately or synchronize all list types at once.

Procedure 77
Downloading list data from the system

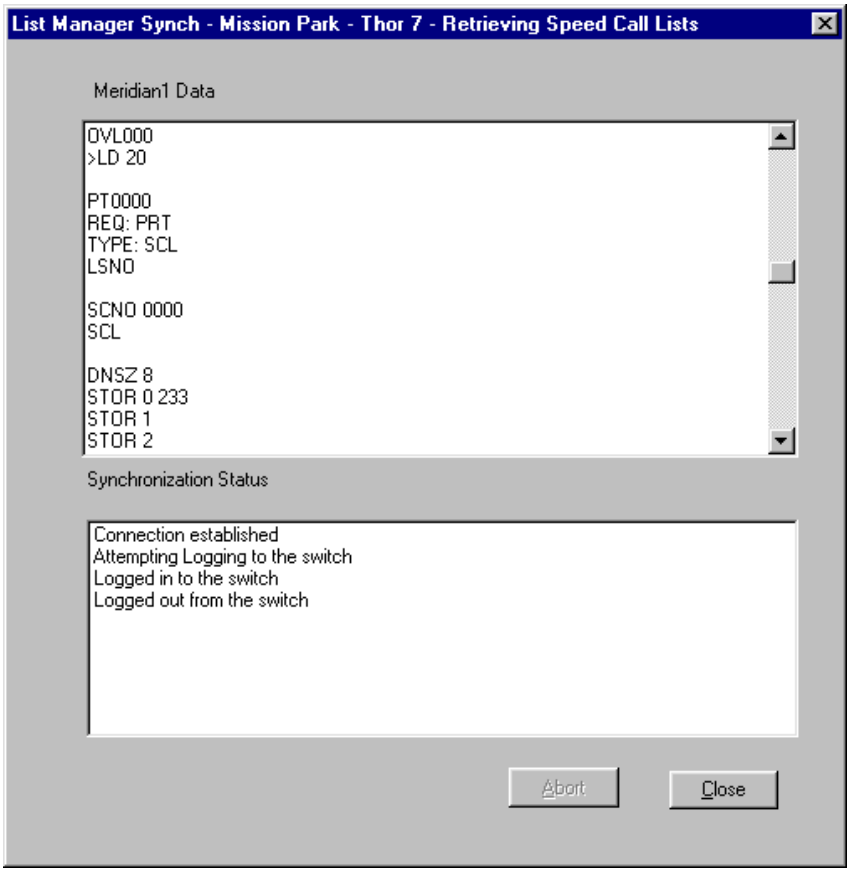
1 Select a list type in the List Type view, or select **List Manager** to download data for all list types.

2 Choose **Synchronize > Retrieve > Now**.

Your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The List Manager Sync window opens (Figure 185).

Figure 185
List Manager Sync window



List Manager automatically logs in to an idle TTY port and downloads list data to the OTM PC.

3 Wait until the Synchronization Status section appears the following message:

“Logged out from the switch”

4 Click **Close**.

End of Procedure

Synchronization considerations

You can transmit data to program a system with relevant list data defined in OTM's List Manager application. List Manager can also retrieve list data from a system, where it can be viewed and modified.

If you have a system with list data already programmed, you should first download the data to OTM. See "Download list data from the system" on page 406. Then you can modify the data and upload the changes to the system.

Use the Synchronize menu to schedule communications with the system. Synchronization is a task that ensures the list data in OTM matches the data on the system. Synchronization can be achieved in one of two ways, as follows:

- Retrieve data from the system to OTM (download).
- Transmit data from OTM to the system (upload).

Generally, you should transmit list data before transmitting station data. This ensures that the list is present on the system before Station Administration assigns feature key access to the list.

Synchronization status

When OTM performs a data retrieval, the synchronization status of each list determines whether the data is updated. The following status indicators define how the list is affected during a synchronization:

- **NEW**: Data has been defined, but not uploaded to the system.
- **TRN** (transmit): Data is synchronized with the system.
- **OUT**: Data is removed from OTM and will be deleted from the system during the next synchronization.
- **CHG** (change): Data has been changed, but the changes have not been uploaded to the system.
- **RPL** (replace): Data in the system is replaced with new data during the next synchronization.

List Manager automatically sets the synchronization status of each list. For example, if you modify parameters of an existing list, the synchronization status is set to CHG (change).

Change synchronization status

You can change the synchronization status of each list in List Manager. For example, if you change parameters for a list, but do not want the changes to take affect on the system right away, you can change the synchronization status of the list to TRN.

Procedure 78
Changing the synchronization statusof a list in List Manager

1. Select a list.
2. Choose **Edit > Change Status** to and choose a new status from the available choices.

End of Procedure

Station synchronization versus List synchronization

List Manager synchronization is a separate task from Station Administration synchronization. After you synchronize list data, you should synchronize station data.

Transmit list data to the switch before transmitting station data. Some List Manager settings make changes in OTM's Station Administration module (for example, feature key assignment). You must ensure the list data is present on the system so that station validation does not fail.

Synchronize List Manager with the system

You must periodically synchronize List Manager data with data on the system.

Upload

Procedure 79
Uploading data from OTM List Manager to the system

1 In the List Type view, select the list type that you want to synchronize or select **List Manager** to synchronize all list types.

2 Choose **Synchronize > Transmit > Now.** The List Manager Sync window opens (Figure 185).

Your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

3 When the Synchronization status area appears “Logged out from the switch,” click Close.

The selected list type is synchronized with the system.

End of Procedure

Download

Procedure 80
Downloading data from the system to OTM List Manager

1 Select the list type that you want to synchronize or select **List Manager** to synchronize all list types.

2 Choose **Synchronize > Retrieve > Now**. The List Manager Sync window opens (Figure 185).

Your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

3 When the Synchronization Status area appears, “Logged out from the switch,” click **Close.**

The selected list type is synchronized with the system.

End of Procedure

List Manager window

The List Manager window is divided into two sections:

- List Type view—Allows you to select a list type. Lists of the selected type appear in the List Detail view. You can also select List Manager to perform global operations.
- List Details view—Allows you to select one or more lists of a specific type. You can select a list and edit its properties, or copy the list data.

If you choose View - Templates, the List Details view shows list templates.

Figure 186 shows the List Manager window.

Figure 186
List Manager window

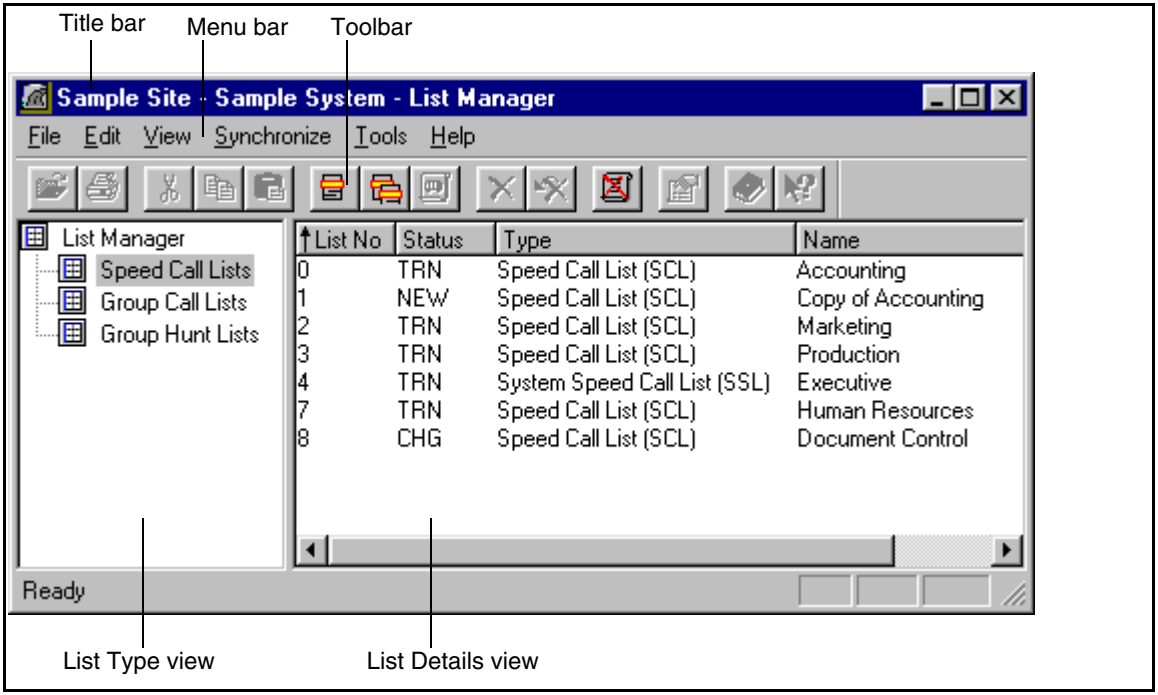

Title bar
Menu bar
Toolbar
Sample Site - Sample System - List Manager
File Edit View Synchronize Tools Help
List Manager
Speed Call Lists
Group Call Lists
Group Hunt Lists
List No
Status
Type
Name
0 TRN Speed Call List (SCL) Accounting
1 NEW Speed Call List (SCL) Copy of Accounting
2 TRN Speed Call List (SCL) Marketing
3 TRN Speed Call List (SCL) Production
4 TRN System Speed Call List (SSL) Executive
7 TRN Speed Call List (SCL) Human Resources
8 CHG Speed Call List (SCL) Document Control
Ready
List Type view
List Details view

Figure 186 calls out the following List Manager components:

- **Title bar**—Identifies the system and contains standard Windows controls to minimize, maximize, and close the window
- **Menu bar**—Provides easy access to List Manager commands

- **Toolbar**—Provides easy access to List Manager commands
- **List Type view**—Allows you to select which type of list to access
- **List Details view**—appears all lists of the selected type, including the list number, synchronization status, list type, and list name

List Details view

Choose **View > Lists** to display the lists defined for the system. Each list contains the following information:

List Number: Unique number used to identify the list on the system.

Type: Type of list, based on the feature it supports (Speed Call, System Speed Call, Group Call, Group Hunt).

Sync Status: An indication of whether the system's data and the data in OTM are synchronized. The following information defines the synchronization status for each list:

- **NEW**: List data defined in OTM, but not uploaded to the system
- **TRN**: List data is synchronized with the system
- **CHG**: List data has been modified in OTM but not in system
- **RPL**: List data defined in OTM to replace synchronized station data
- **OUT**: A synchronized list deleted from OTM but not yet from the system

Name: A name entered in List Manager, used to identify this list.

Template view

Select **View > Templates** to display list templates defined for the system. The display contains the same information for a template as the List view contains for a list.

Templates provide data that is common among many individual lists. In a single operation, using a template, you can define multiple lists which have data in common. A template can contain all or part of a list definition. You can change template data in exactly the same way as station data.

List Manager menus

List Manager menus consist of the following:

- File
  - **Open**: Display the property sheet of the selected list or template.
  - **New**:
    - **List**: Create a new list. appears the New List property sheet.
    - **Multiple Lists**: Create more than one new list. appears the Multiple List Creation dialog box.
    - **Template**: Create a new template. appears the New Template property sheet.
  - **Print Setup...**: Select a printer and a printer connection.
  - **Reports**: Select a Report.
  - **Properties**: Display the property sheet of the selected list or template.
  - **Close**: Close the List Manager window.
- Edit
  - **Undo**: Reverse the most recent command.
  - **Cut**: Remove the selected list(s) or text and place it on the clipboard.
  - **Copy**: Place a copy of the selected list(s) on the clipboard.
  - **Paste**: Insert a copied list into the List Details view.
  - **Delete**: Remove the selected list(s) from the List Manager window.
  - **Select All**: Selects all lists in the List Manager Display View.
  - **Change Status to**:
    - **NEW**: Change the synchronization status of the selected list to NEW. Data has been defined, but not uploaded to the system.
    - **TRN**: Change the synchronization status of the selected list to TRN (transmitted). Data is synchronized with the system.
    - **OUT**: Change the synchronization status of the selected list to OUT. Data is removed from OTM and will be deleted from the system during the next synchronization.
    - **CHG**: Change the synchronization status of the selected list to CHG (change). Data has been changed, but the changes have not been uploaded to the system.

- **RPL**: Change the synchronization status of the selected list to RPL (replace). Data in the system is replaced with new data during the next synchronization.

- View
  - **Toolbar**: appears or hides the Toolbar.
  - **Status Bar**: appears or hides the Status Bar.
  - **Lists**: Change the display view to show lists.
  - **Templates**: Change the display view to show templates.
- Synchronize
  - **Transmit:**
    - **Now**: Transmit data from OTM to the system.
    - **Schedule**: Schedule a transmission of data from OTM to the system.
    - **View Last Transmit**: Display a log file showing results of the last data transmission.
  - **Retrieve**:
    - **Now**: Retrieve data from the system to OTM.
    - **Schedule**: Schedule a retrieval of data from the system to OTM.
    - **View Last Retrieve**: Display a log file showing results of the last data retrieval.
- Tools
  - **Delete Unused Lists**: Display the Delete Unused Lists dialog box.
  - **Options**: appears the Options dialog box.
- Help
  - **Help Topics**: Display the list of Help topics.
  - **What's This**: Provides context-sensitive Help on the next item you select. Clicking anywhere else takes you to the first topic in the Help topic list.
  - **About List Manager**: Display release information for the List Manager window.

Toolbar

The List Manager toolbar includes several useful buttons. The function of each button in the toolbar appears when you hold the mouse cursor over the button. Toolbar buttons provide shortcuts to some of the same commands found in the menus.

Work with List Manager

This section provides procedures to help you use List Manager to perform common tasks.

Create a new list

You can create a new list in List Manager and upload the data to the system. The synchronization status of the new list is NEW. You must transmit the list data to the system for the new list to become active.

Procedure 81
Creating a list

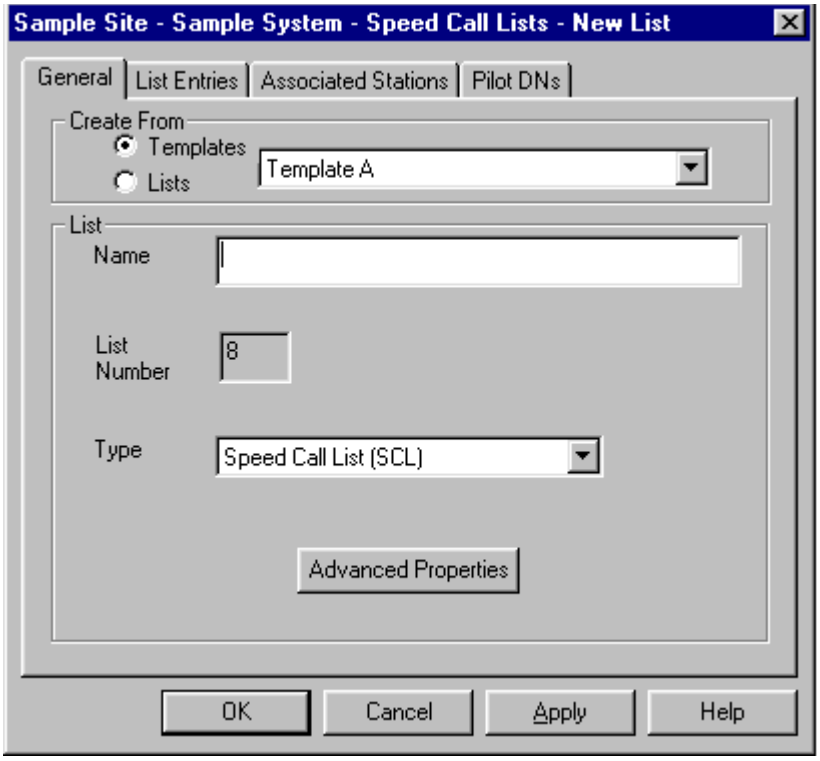
1. In the List Type view, select the type of list you want to create.
2. Select **File > New > List**.

   The New List (General) property sheet opens (Figure 187).

   The New List property sheet for each list type is the same as the standard property sheet for that list type. Some default values for the new list are automatically entered.

   You can edit some of the default values for a new list. To edit the list number, the option for Auto List Number Allocation (Tools - Options) must be cleared.
3. Select either a template or an existing list to use as a basis from which to create the new list.
4. Enter a list name (up to 50 characters, alphanumeric).
5. Select the list type.
6. Click **OK** or **Apply**.

Figure 187
Speed Call list properties (General)



7 Click **Apply** if you want to modify list parameters. Click the tabs along the top of the property sheet to view various parameters.

End of Procedure

Create a list template

You can create a list template or modify an existing template. Templates provide data that is common among many individual lists. A template allows you to define multiple lists that share common elements.

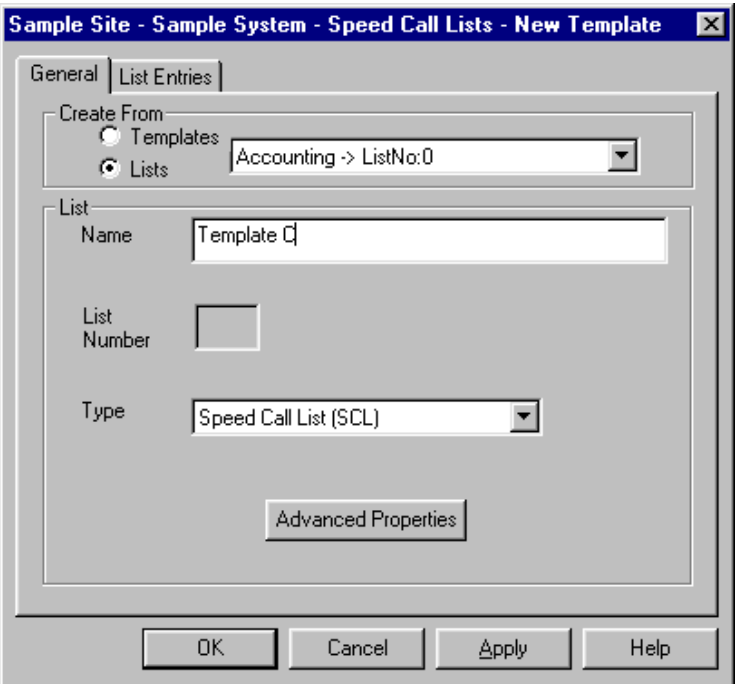
Procedure 82
Creating a list template

1. Choose **View > Templates**.
2. Choose **File > New > Template**.

   The New Template dialog box opens with the General tab displayed (Figure 188).
3. Select either a template or a list to use as a basis from which to create the new template.
4. Enter a template name (up to 50 characters, alphanumeric).

   The List Number field does not apply when creating a template.
5. Select the list type to which this template applies.
6. Click **OK** or **Apply**.

Figure 188
New Template dialog box



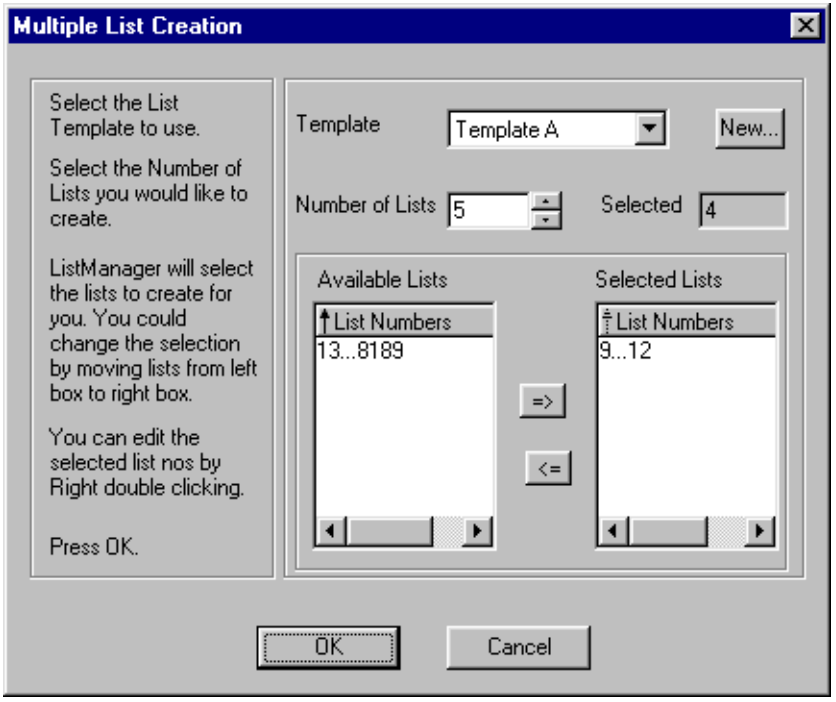
End of Procedure

Create multiple lists

You can create multiple lists with a single operation. You must have a valid template that corresponds to the list type that you want to create. After creating the lists, you should modify each list to provide its unique parameters.

Figure 189 shows the Multiple List Creation dialog box.

Figure 189
Multiple List Creation dialog box



Procedure 83
Creating multiple lists

1 Choose **View > Lists**.

2 Choose **File > New > Multiple Lists**. The Multiple List Creation dialog box appears (Figure 189).

3 Select a template or click New to create a template on which to base the new lists. The template provides common data shared among the lists.

4 Set the number of lists to create.

5 Select the list numbers of the lists to create. Select a range of numbers in the Available Lists field and click the right arrow.

List Manager places the correct number of lists into the Selected Lists field.

In the Available List field and the Selected List field, list numbers are represented as ranges. For example, a range of list numbers from 11 to 20 is represented as 11...20

If you want to create 25 lists and you select the above range, you must still select 15 more list numbers. Select another range to continue adding list numbers to the Selected Lists field. List Manager automatically stops adding list numbers when you reach the correct number, as set in the Number of Lists field.

You can select a subset of a list range. After moving a range from one side to the other, use the right mouse-button to double-click on the selected range. You can edit the range to select a subset of the range. For example, if the selected range is 2...10, you can enter 2...9 or 3...8 (but not 1...11).

6 If there are not enough list numbers available in the selected range, select another range and click the right arrow. Continue until you reach the correct number of lists to create.

7 Click **OK**.

End of Procedure

Delete lists

You can select a list or a template and delete it from the system. You can delete all unused lists from the system with one command. The next time you synchronize List Manager lists, the deleted lists are removed from the system.

Procedure 84
Deleting a list from the system

1 Choose **View > Lists**.

2 In the List Type view, select the list type. In the List Details view, select the list.

3 Choose **Edit > Delete**. A confirmation box appears, stating,

"This will delete the list (s) and station associated with this list (s). Station Associations cannot be undone. Would you like to continue?".

4 Click **Yes**.

End of Procedure

Procedure 85
Deleting a template from List Manager

1 Choose **View > Templates**.

2 In the List Type view, select the list type. In the List Details view, select the template.

3 Choose **Edit > Delete**.

A confirmation box appears, stating, "Are you sure you want to delete the list(s)/ template(s)".

4 Click **Yes**.

End of Procedure

Procedure 86
Deleting all unused lists of a specific type from the system

1 In the List Type view, select the list type.

2 Choose T**ools > Delete Unused Lists**.

The Delete Unused Lists dialog box appears. All unused Speed Call lists appear.

3 Select the lists you want to delete.

4 Click **OK.** The synchronization status of the deleted lists is changed to OUT.

End of Procedure

Manage list data

OTM appears list data in a property sheet that graphically represents the list data. You can manage individual list entries. Data change is described for a typical list. Most lists contain a subset of the data for this example, and the update procedure for each field and function is the same as that described here.

Whenever you modify list data that has already been synchronized with the switch, the Sync Status for that list is set to CHG. This is an indication that OTM and system are not in sync.

View and modify list (or template) details

Each list has various properties that define the list. Some properties are shared among all lists of a given type; some properties are unique to a specific list. List Manager property sheets allow you to view and modify all of the various list properties.

Procedure 87
Viewing and modifing list details

1 Choose **View > Lists**.

You can choose menu View - Templates to work with List Manager templates.

2 In the List Type view, select a list type.

3 In the List Details view, double-click a specific list.

The property sheet for the selected list appears.

4 Make changes as desired. Click the various tabs to view and modify different list parameters.

5 Modify data in the appropriate fields. If you make changes, click **Apply** before you move from one tab to the next.

6 When you have completed the changes, click **OK.**

End of Procedure

Set advanced properties

You can change advanced properties for a specific list. Most of the advanced properties have default values that are set in the Options dialog box (see "Set global list options" on page 433).

Procedure 88
Setting advanced properties for a list

To set advanced properties for a list (Speed Call and Group Hunt):

1 Select a list and choose **File > Properties**. The Properties dialog box for the selected list appears with the General tab selected (Figure 187 on page 416).

2 Click **Advanced Properties**. The Advanced Properties dialog box appears (Table 26).

Table 26
Advanced properties for Speed Call lists and Group Hunt lists

Field	Description
Network Class of Service	Select a Network Class of Service, as defined on the (applies to System Speed Call lists).
Max. DN Size	Select the maximum length of DNs in the list. The default value is set in the Options dialog box (**Tools - Options**).
Max. List Size	Select the maximum number of entries allowed in the list. The default value is set in the Options dialog box (**Tools - Options**).
Memory Usage - in Words	
Free Memory Available	Indicates how much system memory is available for all lists, as of the last synchronization.
Used by List	Meridian 1 or CS 1000S system memory required for this list.

3 Make your desired changes.

4 Click **OK**.

End of Procedure

Modify list entries

You can view and modify list entries within each list.

Procedure 89
Modifing list entries

1 Choose **View > Lists**.

2 In the List Type view, select a list type.

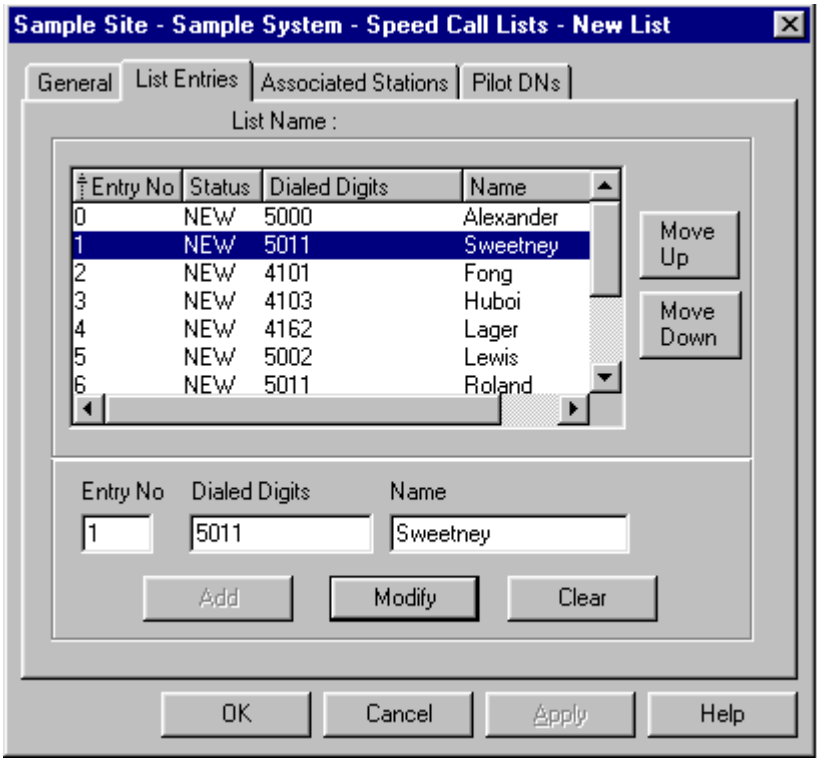
3 In the List Details view, double-click a specific list.

The property sheet for the selected list appears.

4 Click **List Entries** tab.

The List Entries tab lets you modify parameters for each list entry number (Figure 190).

Figure 190
Speed Call List properties (List Entries)



5 Use the List Entries buttons to modify list entries (Table 27).

Table 27
List Entries buttons (Part 1 of 2)

Button	Description
Add	Add a new entry to the list.
Modify	Modify the selected list entry.

Table 27
List Entries buttons (Part 2 of 2)

Button	Description
Clear	Clear the selected list entry.
Move Up Move Down	Use these buttons to change the entry number of the selected entry. **CAUTION**: Be careful when you make changes to list entry numbers. This operation re-orders the entry numbers in a list. For example, if you move entry number 10 up to number 2, then entry number 2 becomes number 3, number 3 becomes number 4, and so on. For Speed Call lists, these changes affect the short key used to dial each list entry. For Group Hunt lists, these changes affect the order of the hunt chain.

6 Click **OK** or **Apply**.

End of Procedure

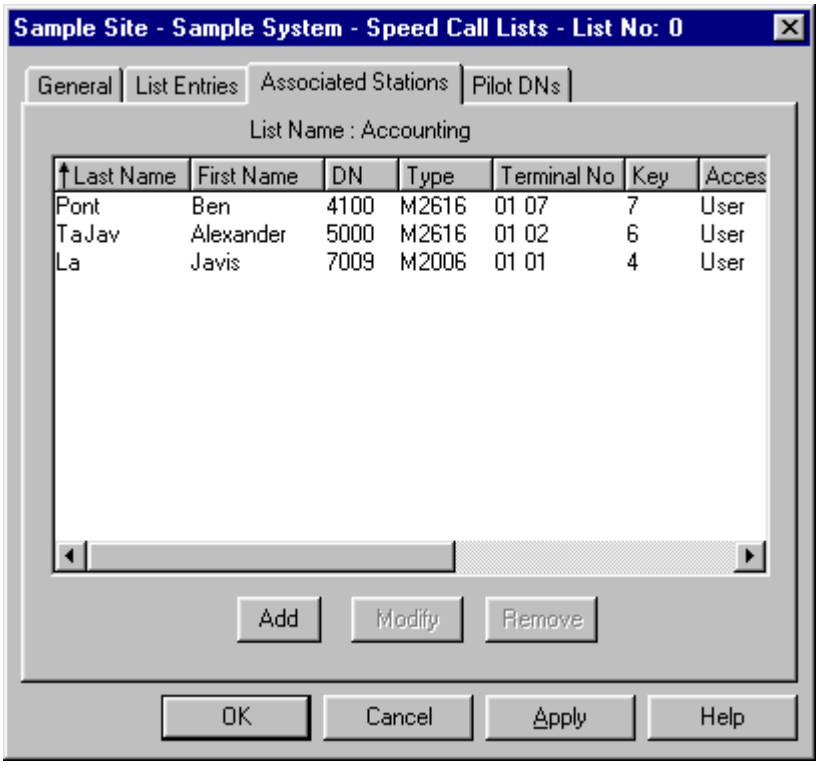
Work with stations

Use the List properties dialog box—Associated Stations tab to assign a feature and its associated list to one or more stations (telephones).

This operation modifies the entries in the Station Administration module. You must synchronize stations from Station Administration to change these settings on the system.

Figure 191 shows the Associated Stations tab for Speed Call Lists.

Figure 191
Speed Call List properties dialog box—Associated Stations tab



Assign stations

Change feature key assignments

Procedure 90
Chang ing feature key assignments for stations:

1 Select a list and choose **File > Properties**.

The List Properties (General) dialog box appears.

2 Click **Associated Stations** tab.

Any stations displayed have the feature assigned.

3 Click **Add.**

The Add Stations dialog box appears.

4 In the Select Stations list, select the station(s) and feature key(s) you want to assign the feature and its associated list.

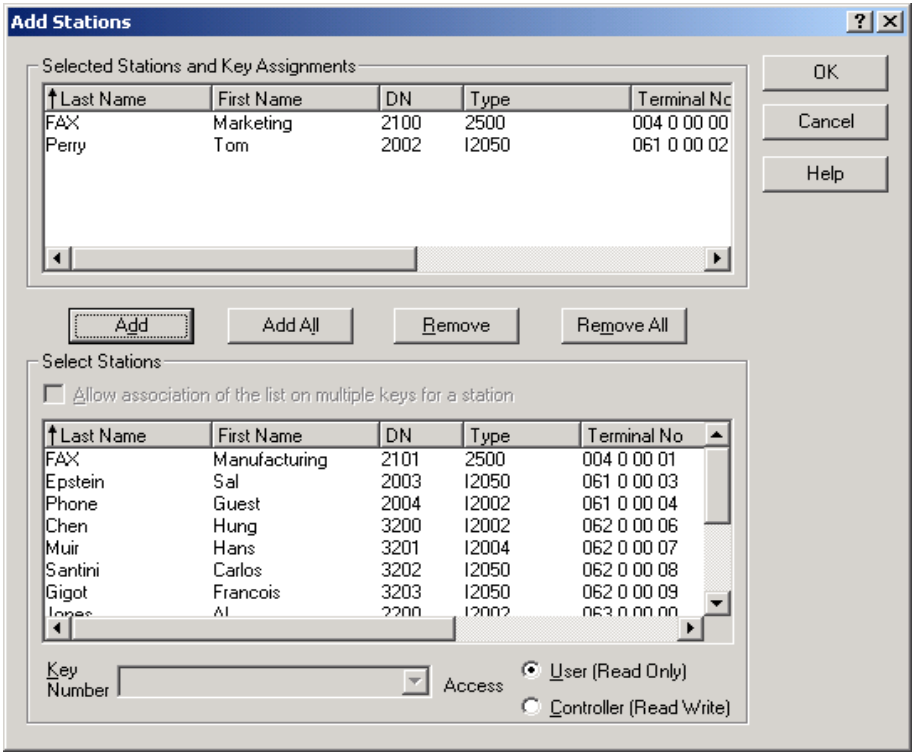
List Manager sets the feature key assignment in OTM's Station Administration module. Therefore, you must transmit the data from Station Administration for the feature key assignment to take effect.

5 Click **Add.**

The selected stations are moved from the Select Stations list (bottom) to the Selected Stations list (top).

6 Click **OK**.

Figure 192
Add Stations dialog box



End of Procedure

Modify feature key properties

Procedure 91
Changing the feature key properties for a station

1 Select a list and choose **File > Properties**.

The List Properties (General) dialog box appears.

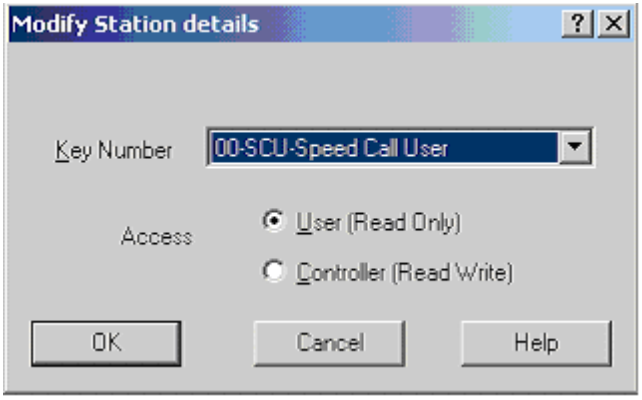
2 Select **Associated Stations** tab.

Any stations displayed have the feature assigned.

3 Select a station and click **Modify**.

The Modify Station Details dialog box appears (Figure 193).

Figure 193
Modify Station details dialog box (Speed Call)



4 For Speed Call, select either **User** or **Controller** to change the access type, if desired.

List Manager sets the feature key assignment in OTM's Station Administration module. Therefore, you must transmit the data from Station Administration for the feature key assignment to take effect.

5 Click **OK**.

End of Procedure

Remove station assignment

Procedure 92
Removing the feature associated with a list from a station

1. Select a list and choose **File > Properties**. The List Properties (General) dialog box appears.
2. Select **Associated Stations** tab. Any stations displayed have the feature assigned.
3. Select a station or stations and click **Remove.**
4. Click **OK.**

End of Procedure

Work with Pilot DNs

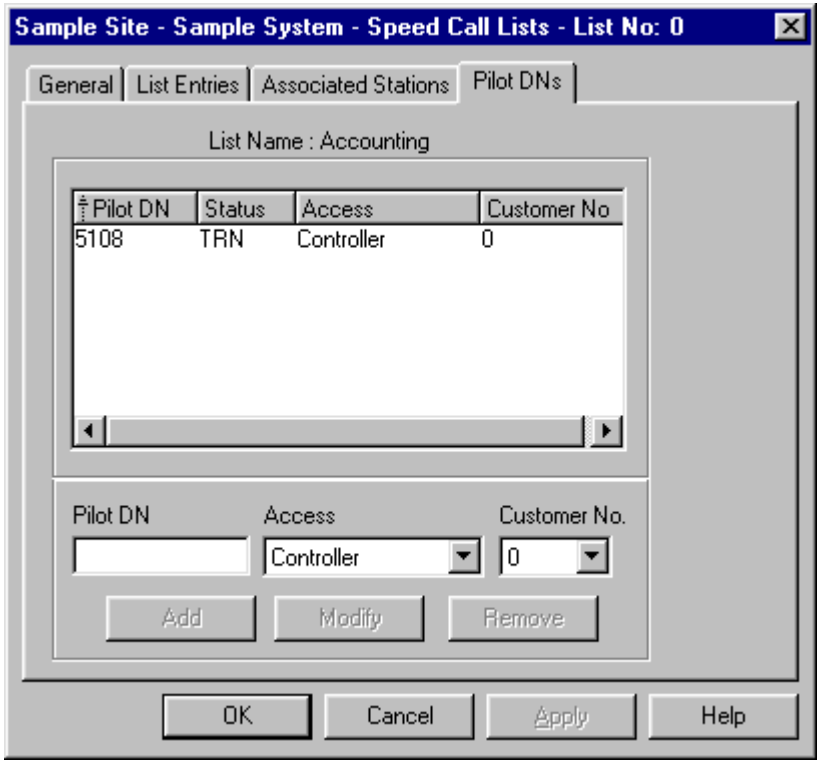
Pilot DNs provide access to Speed Call Lists. A Pilot DN can also activate Group Hunting.

Assign a Pilot DN

Procedure 93
Assigning a Pilot DN to a list:

1. Select a Speed Call list and choose **File > Properties**.
2. The property sheet for the selected list appears.
3. Click the Pilot DNs tab (Figure 194).

Figure 194
Speed Call list properties (Pilot DNs)



4 Use the buttons to Add, Modify, or remove Pilot DNs associated with this list.

Pilot DNs must conform to the customer Numbering Plan. To check the customer Numbering Plan, do the following:

a. In the Navigator, select the system and choose menu **File > Properties**.

b. Click **Customers** tab.

c. Select the customer and click **Properties**.

d. Click **Numbering Plans** tab.

5 Click **OK** or **Apply**.

End of Procedure

Associate Pilot DN to a Group Hunt list

Procedure 94
Associating a Pilot DN with a Group Hunt list:

To associate a Pilot DN with a Group Hunt list:

1. Select a Group Hunt list and choose **File > Properties**. The property sheet for the selected list appears.
2. On the property sheet General tab, enter the pilot DN into the Pilot DN field.
3. Click **OK** or **Apply**.

End of Procedure

Copy and paste lists

You can use the copy and paste commands to duplicate a list. Then you can modify the new list to make it unique. You can also paste the list into the List Manager window for a different system.

When you copy and paste a list, the synchronization status of the new list is set to NEW. The new list is added to the system during the next synchronization.

Duplicate a list

Procedure 95
Duplicating a list

To duplicate a list:

1. Choose **View > Lists**.
2. Select a list and choose menu **Edit > Copy**.

   The list data is saved to the PC clipboard.
3. Choose **Edit > Paste**.

Caution: A confirmation dialog box asks if you want to overwrite the current list with the copied list. Normally, you do not want to overwrite the current list.

a. Click **Change Properties** and give the pasted list a new list number.

b. Make any other changes that are appropriate.

c. Click **OK**.

End of Procedure

Copy a list from one system to another

Procedure 96
Copying a list and pasting to another system

To copy a list and paste it to another system:

1 Choose **View > Lists**.

2 Select one or more lists and choose **Edit > Copy**.

The list data is saved to the PC clipboard.

3 Open another system's List Manager application.

4 Choose **View > Lists**.

5 In the List Type view, select the appropriate list type.

6 Choose **Edit > Paste.**

Caution: If the list number of the list you copied is present on this system, a confirmation dialog box asks if you want to overwrite the current list with the copied list. Normally, you do not want to overwrite the current list.

a. Click C**hange Properties** and give the pasted list a new list number.

b. Make any other changes that are appropriate.

c. Click **OK.**

End of Procedure

Set global list options

Use the Options dialog box to set general parameters that apply to all lists of a specific type.

To display the Options dialog box, select **Tools > Options**.

The Options dialog box has separate tabs for Speed Call, Group Call, and Group Hunt lists. Some options apply only to lists of a specific type.

List Manager options apply when you create new lists. For a specific list, you can override most of these options. Click Advanced Properties on the property sheet (General) tab.

Default options

Default options allow you to manage list allocation efficiently:

- List size—Default number of entries created for a new list.
- Network Class of Service (System Speed Call)—Default Network Class of Service associated with entries in a new list.
- DN size—Default maximum length of Directory Numbers associated with entries in a new list.
- Originator Control over list (Group Call)—Determines if the originator of the Group Call can terminate the call.
- Max. length of queue (Group Hunt)—Default maximum number of calls that can be queued against the Pilot DN for new lists.
- Call Forward All Calls (Group Hunt)—Check to allow Group Hunt to terminate at a station that has Call Forward All Calls allowed.

Memory optimization

The following options help you manage system memory on the systems. These options allow you to restrict the amount of system memory required to support the lists:

— Maximum List Size—Maximum number of entries allowed in a new list.

— Memory Water Mark—Memory threshold. When the system memory used by lists is at or above the Memory Water Mark, the Auto Increase List Size check box is cleared.

— Auto Increase List Size—When selected, lists are allowed to grow as new entries are added (until the Memory Water Mark is reached).

— Read Only Auto List Number—When selected, List Manager allows you to edit the automatically generated list numbers as you create new lists.

Available list numbers

Options for Speed Call and Group Hunt lists include controls where you can set the available list ranges. These options let you restrict the total number of lists allowed for the system. Enter the starting list number and ending list number in the range.

Work with reports

List Manager lets you view, manage, and generate reports using list data from systems configured in OTM. You can view each report on screen, print the report, or save the report to a file. Report layout and formatting is done through Microsoft Excel.

You can generate a report immediately. You can schedule report generation with specific dates, times, and intervals. Generated reports use the data extracted from the OTM database. These reports are automatically saved with a system default name to the default location unless you specify otherwise.

Each report format has the following attributes, as noted by the column headers:

- Report Name - Names of available reports
- Type - Notes if the report is either predefined or customized
- Number of systems - Number of systems for which the report will be generated
- Number of Data Fields - Number of data fields in the report
- Last Generated - Date and time when the report was last generated

Each report shows a specific set of list data. List Manager provides a set of reports whose properties are predefined.

Reports and text files

All log report activity is performed, by default, in the current working directory for the System (the system subdirectory in your PC system). Other reports are sent to the PC directory of your choice. Here is a list of text files with the appropriate extension found in the working directory:

- Reports (*filename*.TXT)

- Communications logs (*filename*.LOG)

You need only supply the *filename* when prompted to save these files—OTM automatically supplies the appropriate extension.

Generate reports

You can generate a report and display it immediately, send it to a printer, or save it to a file. You can schedule report generation to take place at predefined intervals.

Procedure 97
Generating a report

1 Choose **File > Reports**.

The Reports window appears.

2 Select a report in the window display.

3 Click one of the following buttons:

- **Print**—Print the report to the selected printer.
- **Print Preview**—View the report on the OTM PC.
- **Print Setup**—Select a printer to print reports.
- **Schedule**—Display the Schedule window. Use this window to specify when and how often to generate the report.

End of Procedure

Procedure 98
Saving a report to a file

1 Choose **File > Reports**.

The Reports window appears.

2 Select a report in the window display.

3 Check **Print to File**.

4 Click **Print.**

The Export dialog box appears.

5 Select a file format and destination type.

6 When the Choose Export File dialog box appears, enter a file name (or use the default name), and select a directory in which to place the file.

7 Click **Save**. List Manager saves the report to the file name and location specified.

End of Procedure

Predefined reports

List Manager includes several predefined reports. These are listed below along with a short description of each report type. You cannot customize List Manager reports.

List Manager provides the following report forms:

Group Call

- Group Call lists—Group Call lists, sorted by list number
- Group Call lists by name—Group Call lists, sorted by list name
- Group Call lists with entries—Group Call lists including information about their entries
- Group Call lists with associated DNs—Group Call lists including information about their associated DNs

Group Hunt

- Group Hunt lists—Group Hunt lists, sorted by list number
- Group Hunt lists by name—Group Hunt lists, sorted by list name
- Group Hunt lists with entries—Group Hunt lists including information about their entries

Options

- List Manager Options—List options for each list type

Speed Call

- Speed Call list by name—Speed Call lists, sorted by list name
- Speed Call lists—Speed Call lists, sorted by list number
- Speed Call lists by list type—Speed Call lists, sorted by list type (Speed Call or System Speed Call)
- Speed Call lists by SYNC status—Speed Call lists, sorted by synchronization status
- Speed Call lists with associated DNs—Speed Call lists including information about their associated DNs

- Speed Call lists with entries—Speed Call lists including information about their entries

Voice Mailbox

Overview

Voice Mailbox (VMB) data is similar to CPND in that it exists as a separate entity within OTM. However, it is associated with a Directory Number (which serves as a mailbox ID), and modifications to the VMB data can be made from any station that has an appearance of the mailbox DN. The station provides a means of access to data that is not a part of the station itself.

Voice Mailbox is not applicable to CS 1000 systems. Meridian Mail is not supported on CS 1000 systems.

Voice mailbox differs from CPND in that it does not have a dedicated overlay. CPND information can be modified using LD 95 as well as LD 10 and LD 11 (OTM uses LD 95). Voice mailbox information is only accessible from LD 10 and LD 11.

VMB data considerations

VMB data is accessible from the Station Administration module (DN list dialog box). VMB data is retrieved and transmitted with station data. There is no separate VMB communications task as there is for CPND.

When you delete a station that has one or more single-appearance DNs with associated mailboxes, you are prompted to delete the mailbox(es) on the Meridian Mail system. This information is used to respond to a VMB prompt when the station is OUTed on the system.

VMB data can be modified at the Meridian 1 system through the Meridian Mail interface. OTM synchronization is a two-step process, as follows:

1. The Meridian 1 database must be synchronized by uploading the information from Meridian Mail using LD 48.
2. A station retrieval synchronizes the OTM database with the Meridian 1. “Enabling communications: synchronizing” on page 454.

Administering VMB

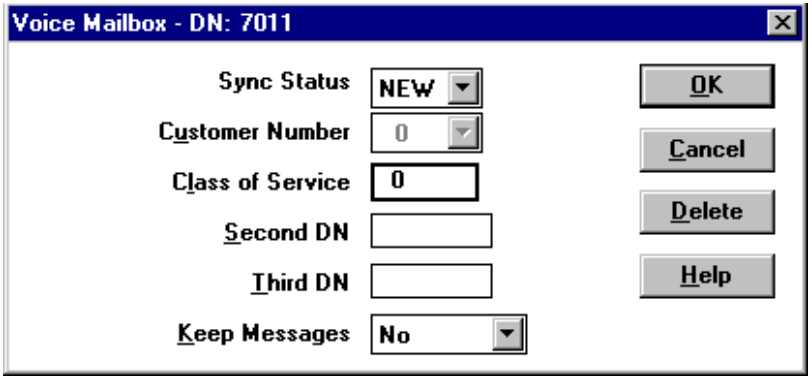
VMB data administration in OTM is provided within Station Administration from the DN assignment function.

Adding/changing stations

When adding or changing stations, you can access VMB data by choosing the VMB button from the DN assignment dialog box, similar to CPND. There is no VMB button in this dialog box for systems without feature package 246. There is also no VMB button for multi-line stations when the key is not SCR, SCN, MCR, or MCN.

To open the Voice Mailbox dialog box (Figure 195), click **VMB** in the Directory Numbers dialog box (Figure 171 on page 378) .

Figure 195
Voice Mailbox dialog box



The title bar of this dialog box shows the DN associated with the mailbox. If it is an existing mailbox, the data fields contain information from that mailbox record, including the following:

Sync Status: This is the sync status of the VMB record, which might be different from the sync status of the station.

Class of Service: Numeric entry field (0–127). This field is required when the mailbox is in NEW status, and there is no default value.

Second DN: DN entry field. Double-click the box to display the DN list dialog box.

Third DN: DN entry field. Double-click the box to display the DN list dialog box.

Keep Messages: Drop-down list box containing YES and NO (NO is default). This field is only available when the VMB sync status is NEW.

The VMB sync status indicates which operation is required at the VMB prompt in overlay 10 or 11.

- **NEW**: VMB does not exist on Meridian 1 and will be added at upload time.
- **CHG**: VMB exists on Meridian 1 and will be changed.
- **OUT**: VMB exists on Meridian 1 and will be removed.
- **TRN**: VMB exists on Meridian 1 and no update is required.

Use the Remove button to change the VMB sync status to OUT. This operation is confirmed with a message box. When a VMB is in OUT status, no further updates are allowed (except for UNDO).

If a VMB is modified or added from an existing station, that station's sync status becomes CHG to allow the VMB update to occur as part of a station update.

Deleting stations

When you remove a station that has a single-appearance DN with an associated mailbox, you are prompted to determine if the mailbox should be deleted on Meridian Mail as well. To respond to this prompt, OTM also prompts you for this information when you delete stations. However, to avoid possible synchronization problems, a different method is used.

When you delete stations in OTM, the delete confirmation dialog box appears. On systems with VMB, this dialog box contains a Delete VMB check box that defaults to selected (YES).

Your YES or NO response is used to continue or cancel the deletion. The delete VMB information is stored as part of the delete transaction, so that it applies to all affected stations. OTM uses this information to respond to any DELETE_VMB prompts presented during transmission of the deleted stations.

The implications of this approach are as follows:

- You are prompted for this information even if none of the stations being deleted has a single appearance DN. In this case, the information is never used.
- If you want to delete two stations but give different responses to DELETE_VMB for those stations, two separate Edit - Delete operations are required.

This guarantees that the correct information is stored in the station that actually gets the DELETE_VMB prompt. In cases where all occurrences of a multiple-appearance DN are deleted within the OTM database, only the last station transmitted receives the DELETE_VMB prompt. Since it is not possible to know which station will be transmitted last in all situations, the DELETE_VMB information must be stored with all the stations.

This procedure prevents accidental deletion of mailboxes when the OTM and Meridian 1 databases are not completely synchronized. Since OTM prompts you on any deletion (even if no single appearance DNs are involved), the DELETE_VMB information is available if the Meridian 1 prompts for it unexpectedly. For example, the OTM database has two appearances of a DN, but the Meridian 1 database has only one (due to a change done in LD 10 or LD 11).

Changing DNs

When you change a DN on a station, its associated mailbox must be removed from the VMB file if the DN prior to the change was single appearance. You should delete the VMB record when you commit to the station update by clicking OK on the Station dialog box. To warn you when a mailbox record is to be deleted, a confirmation dialog box appears.

The confirmation dialog box appears when a station change results in one or more mailboxes being deleted. If you choose to cancel at this point, the entire station update is canceled. If you choose to continue with the operation, the mailbox can be restored later by performing an undo of the station update.

Since a single mailbox can be updated from multiple stations and those stations can be transmitted to the Meridian 1 system in any order, there are some synchronization issues that cannot be resolved by OTM. Some of these issues are described in the examples below.

All of the following examples involve two transactions, which, by default, are transmitted on a first-come-first-served basis. The ambiguities described below only occur if you schedule the second transaction to be transmitted before the first.

VMB data synchronization

Consider the following examples when scheduling synchronizing station data associated with Voice Mailbox data:

Example 1—Deleting stations

Station A and Station B have the only two appearances of DN 2000, which has an associated voice mailbox.

1. Delete station A and respond YES to the Delete VMB dialog box.
2. Delete station B and respond YES to the Delete VMB dialog box.

The mailbox is deleted on Meridian Mail after both stations A and B have been transmitted.

Example 2—Adding a mailbox

Station A has single appearance of DN 2000, which has an associated voice mailbox in TRN status.

1. Change DN on station A to 2001 (this deletes the VMB record for 2000).
2. Add station B with DN 2000 and create a new voice mailbox for it.

If station B is scheduled before station A, the transmit fails when it attempts to create a new mailbox for DN 2000. It exists on the system until station A is transmitted.

Example 3—Changing a DN

Station A and station B both have an appearance of DN 2000, which has an associated voice mailbox. Station B is in TRN status.

1. Update the mailbox through station A.
2. Before transmitting station A, change DN 2000 to 2001 on station A.

When station A is transmitted, the updates to the voice mailbox are not made, because station A no longer has an appearance of DN 2000.

Station Global Update

Global Update overview

The Global Update function is available in both the Station Administration and the CPND Administration modules. It lets you change common data values in each of selected items in the main application window (Station list or CPND list) either directly or through a confirmation option.

The Global Update procedure involves the following steps:

1. Select those list items that you want to update. You can use the Select feature to select stations based on specific criteria.
2. Select a field for update.
3. Define the update or updates to perform on a selected field in the selected items.
4. Execute the change.

You can perform the update on all selected items directly, or you can do it through a confirmation option on an item-by-item basis.

If you are running in Installation mode, you are prompted to set up communication with the system whenever you modify a data record. You can synchronize the data now, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See “Enabling communications: synchronizing” on page 454

Selecting data items

In a data list window of Station Administration or CPND Administration, select the items you want to update. You can change the current selection as follows:

Procedure 99
Selecting data items

1. Click to select a single item.
2. Use the space bar to turn off all selections and select only the first station in the list. This method of selection turns off all other selections, leaving only the single current selection.
3. To select multiple stations, hold down the <Shift> key and click a station, or press the space bar, to toggle the selection status of that station without affecting other selections.

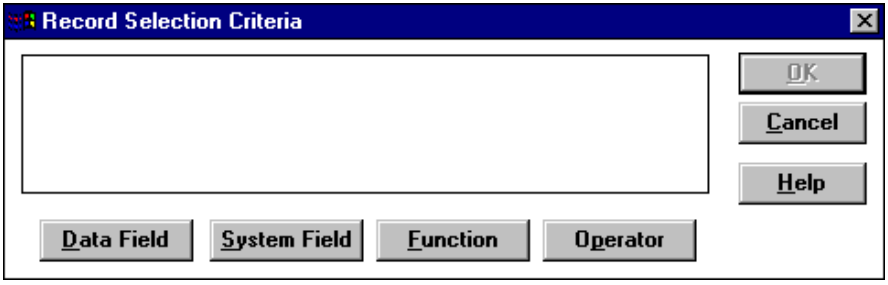
4 Choose **Edit > Select All** to select all items, or select **Edit > Select** to define criteria to select a group of stations.

End of Procedure

Define selection criteria

To define criteria for record selection, choose **Edit > Select** in the Station view of the Station Administration window or in the CPND Administration window. This appears a Record Selection Criteria dialog box in which you enter the expression defining the selection criteria.

Figure 196
Record Selection Criteria dialog box



An expression is a formula that follows standard mathematical conventions regarding the use of brackets ({}) and the order of operations (add, subtract, multiply, or divide). Operations can act on numeric data or on field values from the OTM database. Field names must be exactly as defined in the OTM database. You can enter the desired expression by typing it in the text box directly, or by using the selection criteria and operation buttons provided.

The dialog box has buttons that allow you to select fields, operators, and functions to build a valid expression. You may have to modify the position of brackets when completing the expression.

When you have finished creating a valid expression, click **OK** to display the Station Administration window. Those items that fit the criteria are highlighted. You can still modify this selection as described in "Selecting data items" on page 442.

Select Data Field

When you choose Data Field, a list of available fields appears in the Select Data Field dialog box for Station(Figure 197) or for CPND (Figure 198).

Figure 197
Station Select Data Field dialog box

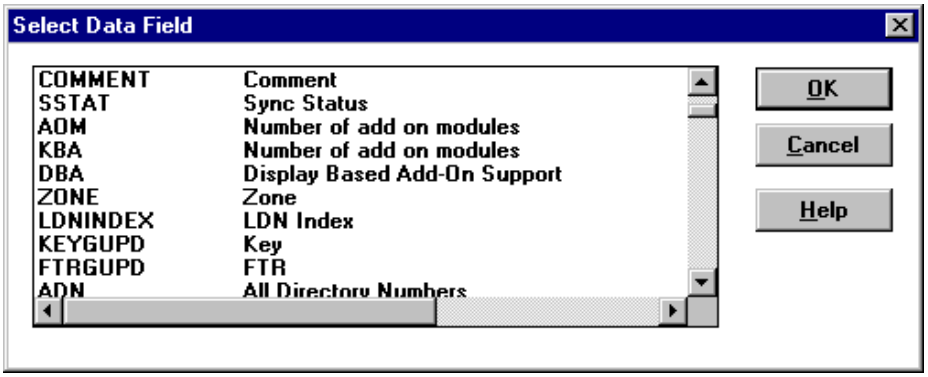
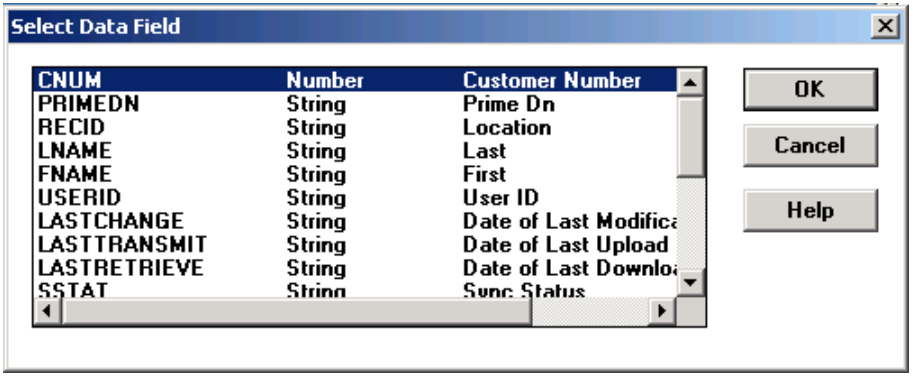


Figure 198
CPND Select Data Field



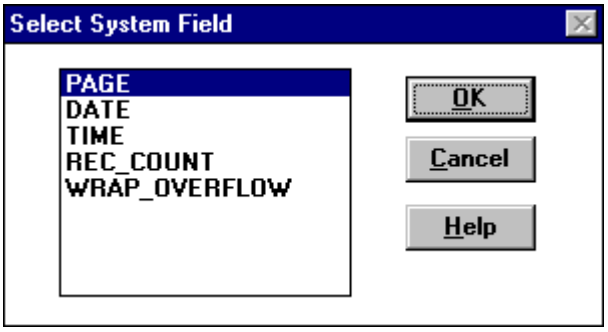
Select the desired station or CPND field name, and then click OK to paste the field into the Select Criteria expression text box at the current cursor position. You can type a letter to scroll the listing to the next item starting with that letter.

Global update is not supported on the following fields: LNAME, FNAME, and DEPT.

Select System Field

When you choose System Field, a list of available fields appears in the Select System Field dialog box (Figure 199).

Figure 199
Select System Field dialog box

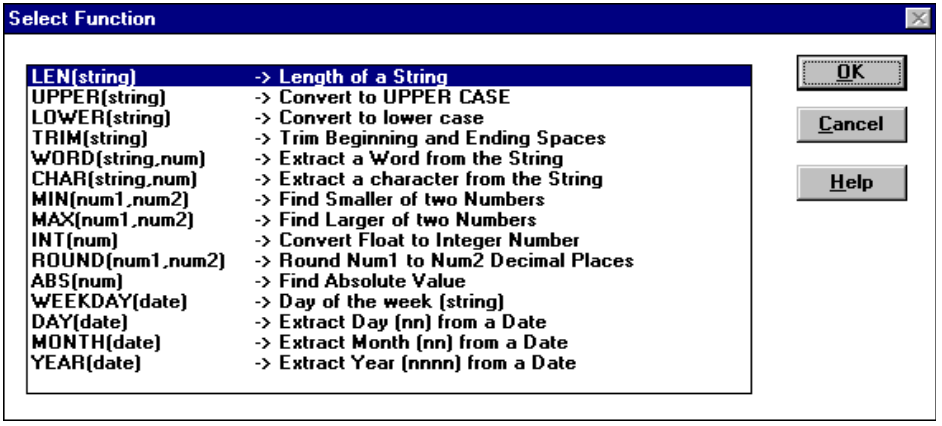


Select the desired field name, and then click OK to paste the selected field name into the Select Criteria expression text box at the current cursor position.

Select Function

A function can generate a value on its own, or it may act on the field directly after it in the expression to produce a value that depends on that field value. When you choose Function, a list of available functions appears in a Select Function dialog box (Figure 200).

Figure 200
Select Function dialog box

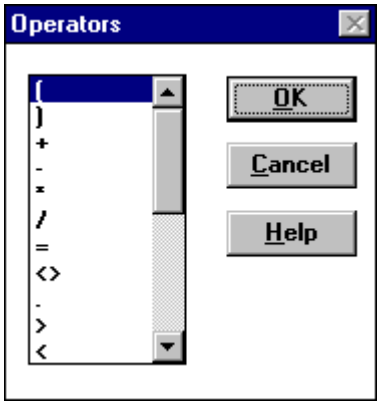

Select Function
LEN(string) -> Length of a String
UPPER(string) -> Convert to UPPER CASE
LOWER(string) -> Convert to lower case
TRIM(string) -> Trim Beginning and Ending Spaces
WORD(string,num) -> Extract a Word from the String
CHAR(string,num) -> Extract a character from the String
MIN(num1,num2) -> Find Smaller of two Numbers
MAX(num1,num2) -> Find Larger of two Numbers
INT(num) -> Convert Float to Integer Number
ROUND(num1,num2) -> Round Num1 to Num2 Decimal Places
ABS(num) -> Find Absolute Value
WEEKDAY(date) -> Day of the week (string)
DAY(date) -> Extract Day (nn) from a Date
MONTH(date) -> Extract Month (nn) from a Date
YEAR(date) -> Extract Year (nnnn) from a Date
OK
Cancel
Help

Select the desired field name, and then click OK to paste the selected function name into the Select Criteria expression text box at the current cursor position.

Select Operator

An operator causes a mathematical combination of field values (arithmetic, Boolean, conditional, and so on). When you choose Operator, a list of available operators is displayed in an Operators dialog box (Figure 201).

Figure 201
Operators dialog box



Select the desired operator, and then click **OK** to paste it into the Select Criteria expression text box at the current cursor position.

Selecting the items for change

When you have completed the selection criteria expression, click **OK** to return to the Administration list window. All items that meet the defined criteria are highlighted.

Example expressions

Below are examples of selection expressions to help you understand the Select feature.

Example 1

Select all stations that have been changed in the OTM database since the last transmission to the switch.

The SYNC field shows synchronization for the sets in relation to the system's database. If the sync status of the set is TRN (for transmitted) then all changes have been transmitted to the switch and the data is synchronized with the switch. Any other status (NEW, OUT, CHG, RPL) identifies a set that has been changed on OTM and needs to be transmitted to the switch (see the Sync Status section for details.)

To select all stations that need to be transmitted, you can either select all stations in NEW, OUT, CHG or RPL status or you can simply select all sets that are not in TRN status. The selection is the same in either case. For this example, choose all sets that are not in TRN status:

1 Choose **Edit > Select**.

2 From the Data Field list, choose **SSTAT**.

3 Click <> (not equal to) from the Operator list (or simply type in <>).

4 Type **"TRN"**. (***Note***: All strings must be enclosed in quotes. Column 2 in the Data Field List identifies the field as either a string or numeric).

The complete command in the Record Selection Criteria edit box is as follows:

```
STATION->SSTAT<>"TRN"
```

Note that instead of following steps 2 to 4, you can simply type the expression above.

5 Click **OK**.

All stations are selected except those in TRN status.

Example 2

Select all stations with a prime DN between 4000 and 5000.

To select all stations within this range, select all sets with PRIMEDN>4000 and PRIMEDN<5000. OTM will allow you to do this by following these steps:

1 Choose **Edit > Select**.

2 Select **PRIMEDN** from the Data Field list.

3 Select > from the Operator list (or simply type **>**).

4 Type **"4000"**.

5 From the Operator list, select **.AND**.

6 Select **PRIMEDN** from the Data Field list.

7 Select **>** from the Operator list (or simply type **>**).

8 Type **"5000"**.

The complete command is as follows:

```
STATION->PRIMEDN>"4000".AND.STATION->PRIMEDN<"5000"
```

9 Click **OK**.

All stations that have a prime DN between 4000 and 5000 are selected.

Example 3

Select all M2616 sets with Class of Service CFXA.

1 Choose **Edit > Select**.

2 Select **INST** from the Data Field list.

3 Select **=** from the Operator list (or simply type it in).

4 Type **"M2616"** (criteria is case sensitive; make sure you use a capital M).

5 Select **.AND.** from the Operator list.

6 Select **CFXA** from the Data Field List (the mnemonic CFXA represents Call Forward which can be either allowed "CFXA" or denied "CFD").

7 Type **="CFXA"**.

The complete command is as follows:

```
STATION->INST="M2616".AND.STATION->CFXA="CXFA"
```

8 Click **OK**.

All M2616 type stations with Call Forward External Allowed (CFXA) are selected.

Specify the change

You can perform a global update on a single field in each item selected in the list window. Once you have selected the desired items for update, you select the field to change.

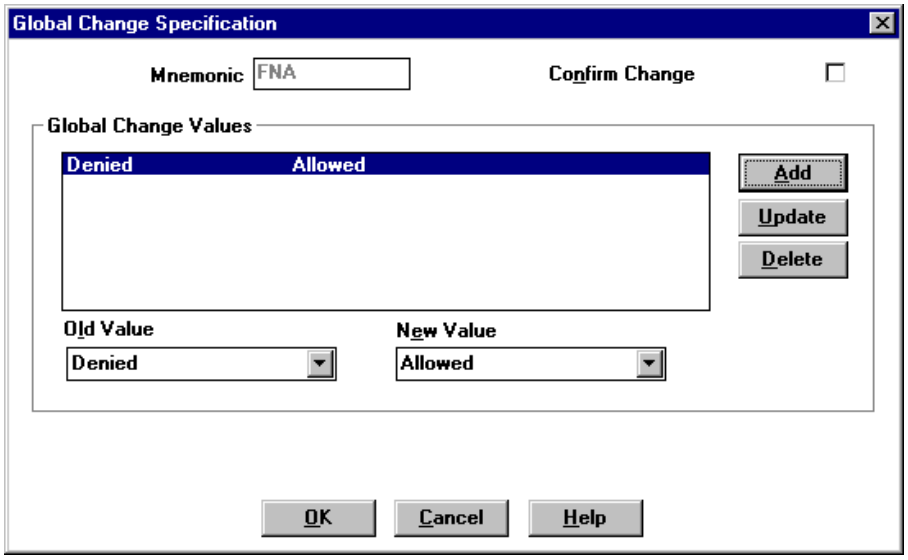
Select the field to change

Select **Edit > Global Update**, the Select Data Field dialog box appears.

The fields listed include only those that can be changed globally. For example, the Instrument (INST) field is not included in this list because some of the fields and their values in the record depend on the instrument.

When you have selected the field to change, click **OK** to display the Global Change Specification dialog box. The selected field name appears in the Mnemonic box. The example in Figure 202 shows the entries required to allow Call Forward No Answer on all selected station on which it is currently denied.

Figure 202
Global Change Specification dialog box



The Global Change Values edit box lets you set up the changes in the field values of the field indicated by the Mnemonic box. The box contains a list of changes that you define by entering values in the Old Value and New Value fields.

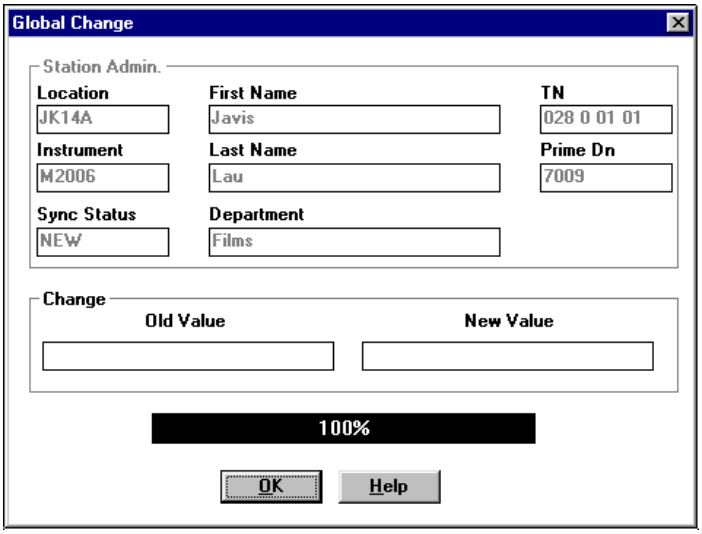
The Old and New Value text boxes are case sensitive. The values must be entered in the same case as is used in the OTM database. For example, XYZ and xyz are not the same values.

Perform the global change

Global Update on CPND does not support range changes.

When you click **OK** in the Global Change Specification dialog box, the Global Change dialog box opens (Figure 203). This dialog box gives the current status only (you cannot edit any of the fields).

Figure 203
Global Change dialog box



The dialog box contains a Station Definition area to identify the station currently being changed. The Change area appears the Old and New Values.

If you are not using change confirmation, a progress bar informs you of the progress of the changes.

While the change is in progress, the dialog box appears the Cancel and Help buttons. Help appears help for this dialog box, and Cancel halts the change task.

IMPORTANT!

If you click Cancel, it cannot be determined which records are changed and which are not.

When the task is complete, the Cancel button is replaced by an OK button.

Change confirmation

If you elected to confirm changes, a Confirmation dialog box asks you whether to "Change this record?" for each station record in turn. The Global Change dialog box contains Station identification and Change identification data for the current field.

You can move this dialog box in the same way as other Windows dialog boxes to see the progress bar and function buttons in the Global Change dialog box.

The Confirmation dialog box appears the following buttons:

- **Change:** Perform the change indicated in the Global Change data box and proceed to the next station.
- **Skip:** Proceed to the next station without changing the current one.
- **Change All:** Proceed with all remaining changes without confirmation.
- **Cancel:** Cancel all remaining changes.

During the change process, the progress bar changes and the Global Change data area is updated.

Change completion

When the Global Change task is complete, the Confirmation box is cleared, the Global Change box indicates 100 percent completion, and the Cancel button is replaced by an OK button.

To return to the list window, click **OK** in the Global Change dialog box .

Global Update—wildcards, matching, and allowed fields

If you choose Edit > Global Update, you build a list of changes for a single field on the selected records. The list of changes is built by adding requests to change Old Value to New Value for the chosen field. To improve efficiency and to shorten the list of changes, you can use * (asterisk), the wildcard character. The wildcard matches any value in the field.

Wildcard matches that you specify are always done after the other Old Value matches have failed. Otherwise, matches are attempted in order. For each selected record, the first change request that matches the Old Value is implemented.

Key* allows you to update a feature when the key on which the feature resides is unknown. For example, suppose you want to update the Conference key on all sets to No Hold Conference/Autodial. The Conference key may exist on any key of the selected station(s). Key* allows you to update the key feature without knowing the key number. OTM searches for the first occurrence of the feature specified, and updates that key per the instructions. See "Global Update—examples" on page 452 for more detail.

Certain fields on the station may not be changed with the Global update facility:

- Location must be unique for each station, so Global update is not permitted.
- Station type may not be changed with global update.
- Certain administrative features of a station, including color and type cannot be changed.

The user must perform a full validation of the records before transmission as validation cannot be done for some fields during global update.

Global Update—examples

A few examples are provided below to help you use the Select and Global Update features. These examples provide the basic steps for selecting stations based on certain criteria and updating common fields. These methods can be applied to a variety of Global Update situations.

Example 1

Suppose you want to change all DNs in the range 4000–4999 to a 5-digit 54000–54999. You want to apply this change to all stations for Customer 1.

1. Global Update is applied to selected stations only. You should, therefore, select all stations for Customer 1. Choose Edit - Select. Click on Data Field and choose the Customer Number field to build the expression STATION->CNUM = 1. (The STATION->CNUM portion is provided automatically when you select Customer Number from the list of Data Fields).

   If there is only one customer on the system, use Edit > Select All to select all the stations for this DN change.

2. Choose **Edit > Global Update** to specify the DN change.

   - Specify the field to be changed in the Select Data Field dialog box. OTM provides a special field called All Directory Numbers. You can move the highlight in the Select Data Field dialog box until the All Directory Numbers field is highlighted. Click OK to select the All Directory Number field.
   - In the Global Change section, you are asked to build a list of each old value and the new value with which to replace it. The Mnemonic field shows that we are working with the field All Directory Numbers (ADN).
   - Enter the DN range 4000–4999 in the Old Value box. Move to the New Value box and enter 54000–54999. To enable this change, click Add. The requested

change appears in the Global Change Values box. (You can Update or Delete each entry in the Global Values box by clicking the appropriate button.)

- When you are satisfied with this change request, click OK.
- OTM examines each station to see if any changes need to be made. A meter marks OTM's progress through the stations. Click Cancel to halt the updating process.
- For any applicable station, the Global Change dialog box appears identifying information for the station and the old and new values that are to be modified.

Example 2

Suppose you want to change all Conference keys (A03) on all stations to No Hold Conference/Autodial keys (CA). Conference may currently be configured on any key on the selected stations.

1 Select the stations to be updated. Since all stations need to be changed, choose **Edit > Select All**.

2 Choose **Edit > Global Update** to specify the desired change. Choose **KEYGUPD** (Key Global Update) from the Select Data Field window. (You can move immediately to the KEYGUPD mnemonic by typing in the first letter of the mnemonic, K.) The Global Update window opens. A list box allows you to specify which key to change. Since you are not sure which key on each station is equipped with Conference, use Key*, the default for this list, to update the feature regardless of the key number.

3 Enter the existing value of the key to be changed in the Old Value box, A03 and press <Tab>. (If the key you want to change has parameters, tabbing brings up the parameter fields.) Conference does not have parameters, so tab moves you to the New Value box. Enter the mnemonic of the new feature (in this case, CA for No Hold Conference Autodial). Press <Tab> to display edit boxes for the parameters associated with the new feature. Enter the appropriate data in the parameter fields.

4 You can choose to confirm each change. Click **OK**, OTM begins the updates. OTM searches each selected station for the first occurrence of A03. If A03 is encountered, OTM changes the key to the new value: CA.

If the station contains multiple Conference keys, only the first one will be changed. You can run a second global update to change the second appearance of a feature.

Example 3

Suppose you want to add a feature to the first blank key on each set, but the first blank key may be a different key number on each set.

The choice of Key* for your Global Update criteria tells OTM to look for the first occurrence of a particular feature on each set selected. When OTM encounters that specified feature, it changes that first occurrence to the specified new feature and then

proceeds to the next set. In this example, the feature you are looking for is a blank feature. Perform the following steps:

1. Select all the stations you want to change.
2. Select **Edit > Global Update**.
3. Choose **KEYGUPD** (Key Global Update) from the criteria list.
4. Choose the key number Key* (this is the default).
5. Enter nothing (blank) in the Old Value, enter the new feature mnemonic and appropriate parameters in the new value. Select Add to add to the Global Update list.
6. Click **OK**. All stations selected have the new feature added to the first blank key. If a selected set does not have any blank keys, the feature is not added to that particular set.

Enabling communications: synchronizing

Overview

Retrieval of information from large systems can be time consuming and negatively affect system performance. You can use the Scheduler utility to plan when to perform these tasks, usually during hours when the number of users on the system are low, to minimize the effect of this operation on the system's performance.

Meridian 1 and CS 1000 systems can be programmed with relevant station data, list data, and CPND data from the OTM application. The OTM application can also retrieve data from a system. For example, you can create an OTM database for a system and then upload relevant data to program a system. You can make modifications within OTM and upload these to the system. At any time, you can download system data to OTM for record-keeping or verification purposes. If you have a system and want to start using OTM to administer the data, you download the data from the system and update the data in OTM to include all OTM administrative and record-keeping data.

Your PC uses a modem to communicate, through normal telephone wires, with a modem connected to the Meridian 1 or CS 1000 system. OTM can also use an Ethernet connection on the CS 1000 system and, if it is available, on the Meridian 1 system. The communications protocols must be predefined for each system. From the OTM Navigator window, select the desired system.

To display the System Properties window, select **File > Properties** .

Select **Communications** tab to define the appropriate communications protocols for this system.

Station Administration, CPND, and List Manager use the Synchronize menu to schedule communications with the system.

Communications considerations

Retrieving data is a two-stage process. The system's data is first downloaded and stored in the current working directory (the OTM system subdirectory). Parsing converts the data into the OTM data format. This new data overwrites (synchronizes) the OTM database for the system with the data from the system. The system's data can be parsed at any time after retrieval.

OTM requests a customer number for all data retrievals in order to enforce the system's Limited Access to Overlays (LAPW) restrictions. If the login password associated with the entered customer number is restricted from the print routines needed for synchronization, the data will not be retrieved.

Station synchronization vs. list synchronization

List Manager synchronization is a separate task from Station synchronization.

Synchronize list data before synchronizing station data.

Some List Manager settings make changes in OTM's Station Administration module (for example, feature key assignment). You must ensure the list data is present on the system so that station validation does not fail.

Station retrieval—TTY Port configuration

During the synchronization retrieval operation, OTM requests a print of the information on the system through the SDI port. The port used for OTM data retrieval should be configured only as a Service Change port. The OTM System Terminal application can be used to access LD 17 to temporarily configure the TTY port as SCH only (not required for Ethernet connections). If the port is configured for other data such as Traffic or Maintenance messages, OTM attempts to distinguish this data from relevant station data. The retrieval log gives errors when data is not recognized as station data.

Data retrieval—Log window

During data retrieval, the amount of activity in other Windows tasks should be limited.

During long data retrievals, or if there is enough activity in other Windows processes, the capacity of the communications buffer can be exceeded. This condition terminates the retrieval process to prevent erroneous data from being entered into the OTM database.

To prevent this occurrence, the Log Window automatically minimizes itself. The icon is labeled “Log Window:” and contains the current site and system names. You should wait momentarily and restore the Log Window to check the progress of the retrieval.

The Log Window remains on the screen longer if you resize it to contain fewer lines. The amount of window resizing and moving during data retrieval should be limited, since these activities prevent the retrieval activity from processing incoming characters.

If the capacity of the communications buffer is exceeded during the retrieval, necessary data is being lost. The OTM software appears a message and terminates if the buffer is exceeded. In this case, stations are not added to the OTM PC database. The message is printed to the log file, warning that the data has been lost.

Repeat the retrieval to add the new data. It is possible to retrieve a portion of the stations on the system by choosing Synchronize > Retrieve > Specify.

The Communications task

Synchronization is a task that ensures that the OTM database reflects the data on the system. The task can be achieved in two ways:

- Retrieve the system’s data to the OTM database (download).
- Transmit OTM data to the system (upload).

Nortel recommends that you turn off all TTY messages (including bug messages) during download or upload.

Note: The speed of transmitting or retrieving is affected by the size of the Station application window. Minimize the Station window to maximize transmission of data.

Whenever you require access to a system that is defined as a system for OTM, use the Synchronize menu of the OTM module you are currently using (Station Administration, CPND, or List Manager). You can use this menu to schedule upload or download of selected data, or you can define criteria to download or upload specific data. Whenever you modify the OTM database, you are prompted to set up a transmit task to upload the new or modified data to the system.

Parsing retrieved data

The connection to the system is only required during the retrieval stage. If you are connected to the system through a modem, OTM disconnects the modem immediately after the retrieval and before the parse. The parsing takes place on the PC only. If you

interrupt the parse, for example, by turning off or rebooting the PC, it can be restarted by using Synchronization Retrieve - Parse Only.

Multi-Tenant

If the TENA package is equipped, you must supply a tenant number (TEN).

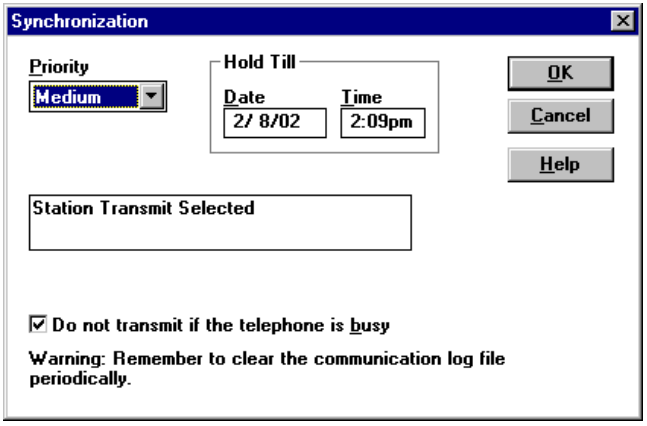
System hardware

During station data retrieval, the system hardware information is updated with cards that support the type of stations being retrieved. This may not actually match the hardware used. If an exact match is required, you must manually update the hardware data in the Station Hardware view.

Synchronization

Whenever a communication task has been defined, you are prompted in a Synchronization dialog box to set up a schedule for the task (Figure 204).

Figure 204
Synchronization dialog box



The following data can be entered to schedule a task:

Priority

The Priority drop-down list box contains the numbers 1 through 10, representing the priority level for the task. The number 1 represents High, 6 represents Medium, and 10 represents Low. The default is Medium. Change the priority by selecting an item, or enter the number in the text box.

The Priority number determines where, in the current communications task queue, this task is placed.

Hold Till

Hold Till is made of two text box fields that determine when this task is sent to the communications queue.

Date

The date for the task in the format *MM*/*DD*/*YY*, where *MM* is the two-digit month in the range 01–12, *DD* is the two-digit day in the range 01–31, and *YY* is the two-digit year. The default entry is the current date (leading zeroes are dropped when the input is validated).

Time

The time for the task in the format *HH*:*MMXX*, where *HH* is the two-digit hour in the range 01–12, *MM* is the two-digit minutes in the range 00–59, and *XX* is AM or PM representing before or after 12:00 noon. The default entry is the current time.

Description

This is a description of the scheduled task

Do not transmit if the telephone is busy

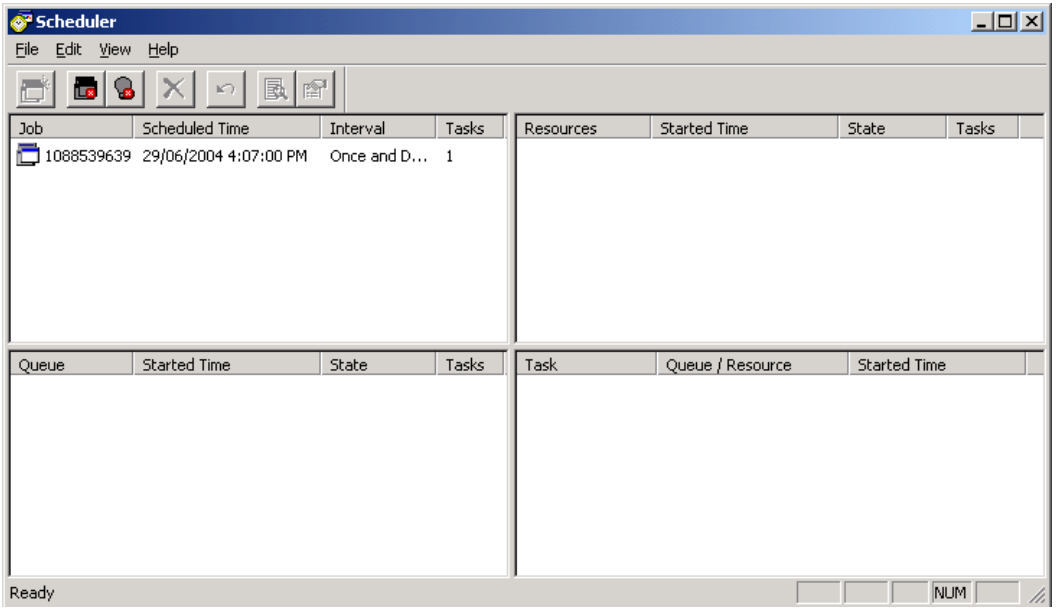
Transmission of changes while a telephone is busy disconnects the active call. If you select this check box, it causes the sync task to select the status of the telephone before transmitting changes. If the telephone is busy, the change is not transmitted and the event is logged in the appropriate transmit log. It is up to the user to check the logs and reschedule the change.

Change as replace

This field is only available if OTM is in Maintenance mode. See “Synchronization considerations” on page 467.

If you accept the default entries, the task is scheduled immediately.

Figure 205
Scheduler task



Click **OK** to send the task to the Scheduler module of the OTM application Figure 205.

If the task is not immediate, the Scheduler runs iconized on the desktop. The Scheduler must be running at the scheduled time for the task to be sent to the communications task queue.

You are not required to schedule a task at any particular time.

Click **Cancel** in this dialog box and use the Synchronize menu at any time to schedule a task.

Retrieve

This task updates the OTM database with selected data from the system. You can select data items in the current list window (Station or CPND), or you can define criteria for system data to be retrieved.

When you choose Synchronize - Retrieve, a submenu allows you to select criteria for downloading selected station data. The submenu contains the following items:

All: All data for stations or CPND in the system.

Selected: Only items selected in the current list of CPND or stations.

Since: Only stations on the system that have changed since a specified date (not applicable to CPND).

Specify: Define criteria for stations or CPND data on the system for download.

Reserved Unit TNs: Terminal Number units that have been reserved for non-station instrument types that do not apply to a particular customer (for example, PWR, OOSSLT, OOSMLT).

Parse Only: Lets you access raw data retrieved from the system and parse it into the correct format. Note that the parsed data will overwrite the current Station Administration data.

Log: View or clear a log of communications activity.

Retrieving all data

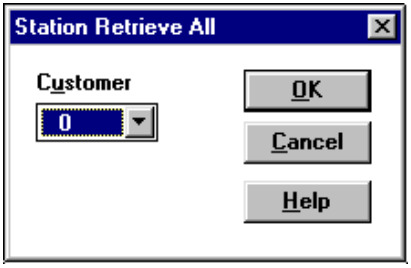
You can set up communications with the system to retrieve all data (station or CPND) that pertains to a single customer in the system.

Station Retrieve All

Before retrieving data, minimize the Station window to maximize transmission of data.

Choose **Synchronize > Retrieve > All** in the Station Administration module to display the Station Retrieve All dialog box (Figure 206).

Figure 206
Station Retrieve All dialog box



The dialog box contains the following data entry field:

Customer

A drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

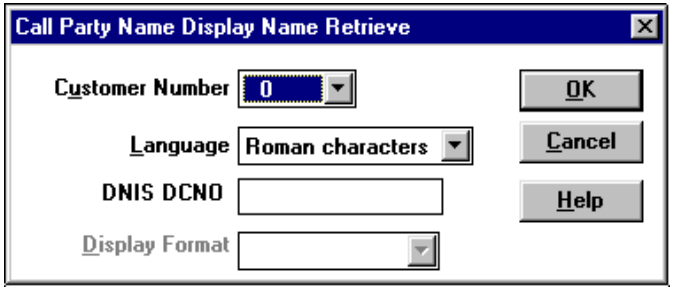
Click **OK.** You are then prompted to set up the communications task.

During station retrieval, the hardware list is updated with cards that support the type of stations being configured in OTM. These might not be the exact type of hardware cards actually installed in the system. However, they will be cards with equivalent function as the installed cards.

CPND Name Retrieve All

To display the CPND Retrieve dialog box (Figure 207), select **Synchronize > Retrieve > All** in the CPND Name view.

Figure 207
CPND Name Retrieve dialog box



The CPND Retrieve dialog box contains the following data entry fields:

Customer Number: A single-line drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

Language: A single-line drop-down text box with a list of languages defined for the open system. The text box contains the currently selected item.

DNIS DCNO: A text box in which you can enter the DNIS IDC table number and DNIS IDC for this group of CPND entries.

Display Format: A single-line drop-down text box with a list of the CPND name display formats defined for the open system. The text box contains the currently selected item.

Click **OK.** You are then prompted to set up the communications task.

Selecting data to retrieve

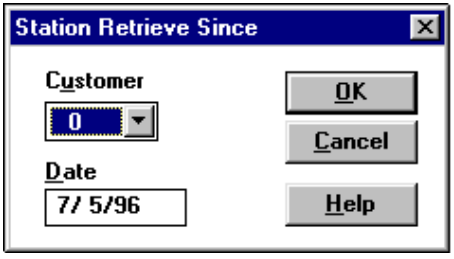
You can select items in the Station list or CPND list window that you want to download from the system. See “Station Global Update” on page 442. system data overwrites the data currently stored in the OTM database for the selected items.

Select **Synchronize > Retrieve > Selected**, you are prompted to set up the communications task.

Retrieve Since option

To display the Retrieve Since dialog box **(Figure 208)**, select **Synchronize > Retrieve > Since** in the Station Administration module.

Figure 208
Station Retrieve Since dialog box



In addition to the Customer field from the Station Retrieve All dialog box, this dialog box contains a new field:

Date: This text box contains the date in the format *MM*/*DD*/*YY*, where *MM* is the two-digit month in the range 01–12, *DD* is the two-digit day in the range 01–31, and *YY* is the two-digit year.

Click **OK.** You are then prompted to set up the communications task. The task retrieves all data that has changed since the specified date.

During the Synchronization Retrieval operation, OTM requests a print of the information on the system through the SDI port. OTM attempts to distinguish relevant data from other messages that may also be passed through the same port. Examples include traffic and maintenance messages. You may find that it helps the accuracy of the OTM retrieval process to temporarily disable other uses of this port.

Specifying data to retrieve

Advanced users can specify stations or CPND (Name or Administration) or Reserved Unit Type (RUT) data with a one-to-one correspondence of data in certain fields for retrieval.

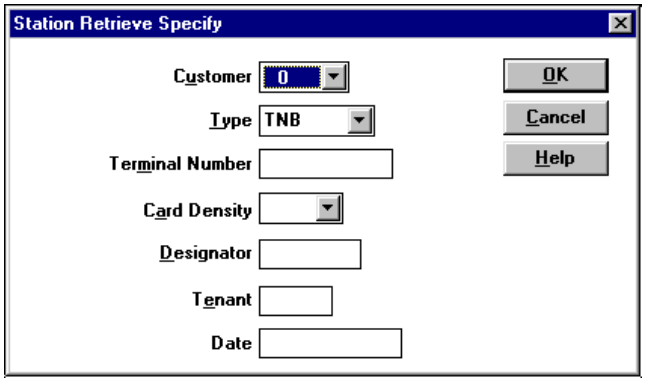
When you retrieve Station Data, CPND names are also retrieved, and the Station View is updated accordingly.

Station Retrieve Specify

To display the Station Retrieve Specify dialog box (Figure 209), select **Synchronize > Retrieve > Specify** option in the Station module .

Enter the data pertinent to those stations on the system that you want to download. By default, all fields in the dialog box are blank. All stations are downloaded if no data is specified.

Figure 209
Station Retrieve Specify dialog box



Criteria you can set for station selection include:

Customer

A drop-down text box with a list of the customer numbers defined for the current system. The text box contains the currently selected item.

Type

A drop-down text box with a list of the instrument types (telephones) available for the current system. The text box contains the currently selected item.

You can use Station Retrieval—Using Type = 2000 to retrieve all 2000 type sets from the Meridian 1 system. In the Retrieve Specify dialog box, move to the Type box. You can type 2000, although it does not appear in the list box. OTM correctly responds to the Type prompt during retrieval.

Terminal Number

Enter a TN or partial TN to retrieve only those stations attached to the part of the Terminal Number entered.

Card Density

This text box allows you to enter the card type. The card type value is associated with the terminal number.

Designator

Enter a designator value in this field to retrieve all stations with this Designator.

Tenant

Enter a Tenant value in this field to retrieve all of that Tenant's stations.

Date

This field accepts a date in the format *MM*/*DD*/*YY*, where *MM* is the month in the range 01–12, *DD* is the day in the range 01–31, and *YY* is the two-digit year. This retrieves all stations modified after the specified date.

If you request a retrieval from a large system, using Specify and the Type, the system can take a long time to select the appropriate stations. If the time-out period (set in system properties) is not long enough, OTM determines that no more information is being sent by the system and halts the retrieval.

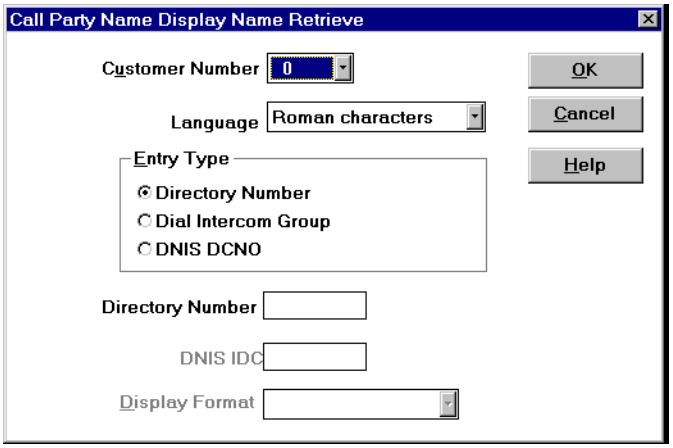
The number of stations retrieved is stated in the Retrieval Log. The time-out parameter can be lengthened to give the system sufficient time to find the appropriate stations to transmit. However, a long time-out period also lengthens the time required by OTM to correctly identify that the system has no more information to send. You need to be patient if you extend the time out period beyond the default values.

OTM is able to retrieve selected stations. You can also retrieve all stations, or choose Synchronize - Retrieve - Specify, using a partial TN.

CPND Name Retrieve Specify

If you want to define the CPND name data for downloading, choose Retrieve - Specify in the CPND Name view window to display the CPND Name Retrieve dialog box (Figure 210).

Figure 210
CPND Name Retrieve dialog box



CPND Name Retrieval—Synchronization prompt

When retrieving CPND names from the system (using LD 95), OTM prompts you for additional information necessary for retrieval. The additional information differs depending on the release of the software on the system.

Display Format: You are prompted for Display Format only if OTM does not find a valid Display Format. If OTM does not prompt for the Display Format, the applicable format is displayed, but not enabled for modification.

The criteria you can set for CPND name selection include the following:

Customer Number

A single-line drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

Language

A single-line drop-down text box with a list of languages you can use for the display. The text box contains the currently selected item.

Entry Type

A selection field containing three radio buttons for the type of entry for this station. The choices include:

Directory Number: Required to enter Directory Number

Dial Intercom Group: Required to enter Group and Member, separated by a space

DNIS IDC: Required to enter DNIS IDC table number and DNIS IDC

Directory Number

A numeric field that accepts up to 9 digits that represents the DN for this station. You can double-click this field to display the list of currently assigned numbers in the numbering plan for the open system. You can select the number for this station in the Directory Numbers dialog box. This is described in "Directory Number assignment" on page 377.

Display Format

A single-line drop-down text box with a list of the CPND name display formats defined for the open system. The text box contains the currently selected item.

Click **OK.** You are then prompted to set up the communications task.

When you retrieve Station Data, CPND names are also retrieved, and the Station View is updated accordingly.

Synchronization status and retrieval

Sync status

The OTM Delete or Cut operation works slightly differently, depending on the station's synchronization status. A station marked NEW can be deleted immediately from the OTM PC database, since it has not been configured on the system. A station with any other status is marked OUT, since the station must be OUTed on the system before the station may actually be deleted from the OTM PC database. A station marked OUT will continue to appear in the list of stations until it has been successfully OUTed from the system. A station with a status of OUT on the OTM PC database on which you apply Edit - Cut or Edit - Delete continues to be marked OUT until it has been successfully synchronized.

Synchronization considerations

If the Station Administration module is in Maintenance mode (set from Options - Mode in Station Administration module), you are prompted to schedule data transmission to Meridian 1 when any modifications are made to the data stored in OTM.

You can schedule synchronization when prompted, or schedule later.

If OTM performs a retrieval, including station and CPND name, the Synchronization Status determines whether the OTM data is updated. In all cases, the Retrieval log contains a record of the retrieval and the results of any comparisons with an existing system. The following Synchronization Status terms are used in OTM:

- **NEW**: The data for this station should not exist on the system, and the station will not be updated.
- **TRN**: The data for this station in OTM should agree with the data in the system. The OTM data is updated to reflect the current configuration on the Meridian 1 or CS 1000 system.
- **CHG, RPL:** The data for this station has been changed since the last time OTM and the system have been synchronized. The station is not updated.
- **OUT:** The OTM user has marked this station for deletion, the current configuration of the station on the system is not relevant and, therefore, OTM is not updated.
- **CUR:** The data for this station in OTM should agree with the data in the system.
- **SWP:** The data for this station has been changed since the last time OTM and the system have been synchronized. The station is not updated.

Current record

When you select a CPND record for editing (a record with a sync status of TRN, CHG or RPL), Station Administration copies the record and saves the copy in the database with a Sync Status of CUR. The TRN status then changes to CHG. The CUR record contains the original station configuration and can be used as a backup.

If you change a record's status from CHG or RPL to TRN, NEW or OUT, the associated CUR record is deleted.

The CUR record can be viewed but not modified or updated. To restore the original station configuration, select one or a multiple of CUR records, and choose Restore from the Edit menu. When the CUR record is restored, the CHG record is deleted (if one exists) and the record status changes to TRN.

The CUR record is primarily used for web-based Station Administration, where the interface must show the current configuration of the switch, as opposed to a configuration with information pending.

CUR Record and Global Update

A record with a CUR status does not change to another state (CHG, RPL, OUT, NEW, TRN), and a record with another status does not change to CUR following a Global Update of the database.

Generating Reports

When you select a form file to run a report, you are presented with check boxes for each of the Sync statuses. Select the box to include records with the corresponding status in the subsequent report.

List Manager and Corporate Directory

List Manager and Corporate Directory allow you to associate a set of stations to a list and generate customized directory reports. Neither application includes CUR records in reports or lists.

Forms interface

When using the Forms interface to view a CUR record, the OK button in the Update dialog box is disabled, as CUR records cannot be modified.

Transmit

This task updates the system data block with selected data from the OTM database. You can select data items in the current list window (Station or CPND).

When you choose Synchronize - Transmit in the Station or CPND module, a submenu allows you to select criteria for uploading data to the system. The submenu contains the following items:

Selected: Upload only selected items in the current list of CPND or stations.

Log: View or clear a log of communications activity.

Selecting data to transmit

Before transmitting data, minimize the Station window to maximize transmission of data.

You can select items in the Station list or CPND list window to upload to the system (refer to "Station Global Update" on page 442). The OTM data overwrites the data currently residing in the system for the selected items. When you choose Synchronize - Transmit - Selected, you are prompted to set up the communications task.

Communications logs

All communications activity is recorded in log files that are stored in the current working directory of your OTM administration modules. There are seven separate log files. The names follow normal PC conventions, as follows:

- **RTRSTN.LOG**: Station data retrieve
- **TRNSTN.LOG**: Station data transmit
- **RTRCPND.LOG:** CPND data retrieve.
- **TRNcpnd.LOG:** CPND data transmit
- **RTRNAME.LOG**: CPND data retrieve
- **TRNNAME.LOG**: CPND data transmit
- **OVL81RTR.LOG**: Reconcile data transmit noting deleted sets information

Each of these logs is accessed from the Log menu in the appropriate module's Synchronization - Transmit or Receive menu.

When you choose Log, a submenu provides the following items:

View: Sends the log file to the viewer so you can browse or print the log. Log activity is appended to the end of the file, so the most recent activity is at the bottom of the viewer. See "OTM file Viewer" on page 503.

Clear: Clears the log file. Do this occasionally so that the file does not get too large.

There is no limit to the size of the log files, but there is a limit to the size of log files that the viewer can handle. There is a 100-page limit on log files for viewing from Synchronize - Log - View.

During station retrieval, limit the amount of activity in other Windows tasks. During long station retrievals, or if there is sufficient activity in other Windows processes, the capacity of the communications buffer can be exceeded. This condition terminates the retrieval process to prevent erroneous data from being entered into the station database.

You may notice that the Log window minimizes itself to prevent this occurrence. As the communications buffer starts to fill excessively, the Log window is minimized to allow faster processing of the incoming data. Wait momentarily and restore the Log window to check the progress of the retrieval.

The Log window remains on the screen longer if you resize it to contain fewer lines. Similarly, minimize the amount of window resizing and moving during station retrieval, since these activities momentarily prevent retrieval activity from processing the incoming characters.

If the capacity of the communications buffer is exceeded, necessary data is lost to OTM. OTM appears a message and terminates the station retrieval process. You will notice that the stations were not added to the OTM PC database.

Repeat the retrieval to add the new station data. Alternatively, choose Synchronization - Parse Only to add the downloaded data to the OTM PC database, and continue the retrieval process from where it stopped. It is possible to retrieve a portion of the stations on the system by choosing Station Retrieve - Specify.

Viewing large log files

There is currently a 100-page limit on the size of log files and reports that can be displayed on the screen. This limit affects Synchronization - View - Log and Reports menu items. A message appears to warn you that the file is too large to be viewed in its entirety, and only the first 100 pages appear.

You can avoid this limit by doing the following:

- Periodically, use Synchronization Log - Clear to prevent text from old retrievals or transmissions from unnecessarily adding to the size of the log file.
- Test large reports on a portion of the data, using the Filter feature in the Report Form menu. For example, you can limit the report to the first 200 records by opening the report form and selecting the Options - Report Filter. To limit the number of records, click System Fields, select the REC_COUNT field, and build the expression SYS->REC_COUNT <= 200. If a Report Filter already exists, this clause can be added using the .AND. operator.
- View large files with another program. Note that these files are too large to be viewed using the Windows Notepad.

Transmission errors during retrieval

Inspect the Retrieval Log after performing a synchronization. This log reports the number of stations added, the number of stations compared, and the number of stations

with discrepancies from that comparison. In addition, the Retrieval Log may contain warnings from unrecognized data during the transmission. The unrecognized data may be the result of transmission problems.

Compare the expected number of stations to be retrieved to the number of stations actually retrieved. If too few stations were retrieved, look for warnings in the log file that indicate that not enough data was correctly received to recognize the station.

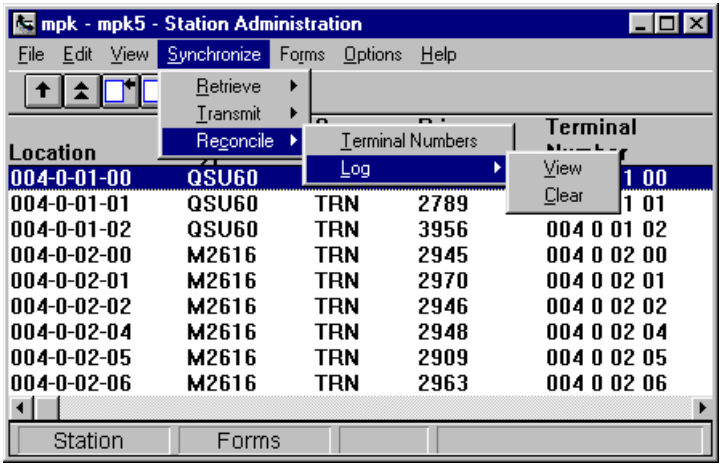
Also note the number of compared stations. The first retrieval into the OTM PC database should only be adding stations. If any stations were compared, it may indicate a transmission error in the TN field that caused OTM to treat this station as an update to an existing station, instead of creating a new station.

Reconcile TN feature

This tool corrects synchronization problems that may arise when changes are made to station data outside of OTM. These changes may include Set Removal, Set Relocation done through a TTY using LD 10 or LD 11. The switch database is changed but the OTM database on the local PC is left unchanged.

OTM users launch the Reconcile TN feature from the Synchronize menu in the Station Administration window. OTM compares the listed sets information with information in the OTM database against the switch database to determine which TNs are valid. Invalid TNs are removed from OTM. All removed TNs are noted in a log file viewable by selecting Synchronize > Reconcile > Log > View (Figure 211).

Figure 211
Viewing the log file



The Reconcile TN feature requires some time to complete its function and can degrade system performance. Do this task when switch traffic is low or after hours to minimize the effect on the system's performance. Users should back up the existing database before starting this function.

Note: If using the auto set relocation feature, the Retrieve All function must be run as well to fully update the station information.

Conversion utility

Overview

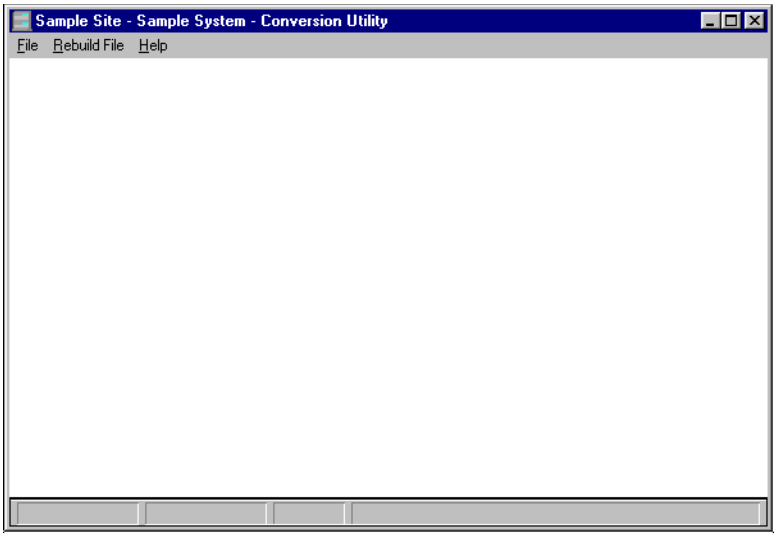
The OTM Conversion utility provides two functions:

- Rebuild of station data to the current OTM file structure. You may need to run this conversion if you have copied system data to your current release directories that was built in an earlier release.
- Import of station data from other applications.

Starting the Conversion utility

When you choose File - Conversion utility in the Station Administration module, the OTM Conversion utility window opens (Figure 212).

Figure 212
Conversion utility window



The window initially contains no data in the workspace. The menu bar contains the following drop-down menus:

- File
- Rebuild File
- Help

You can select the desired menu using the mouse (click) or keyboard (Alt+ underlined character) in the normal way.

File menu

The File menu provides the following functions:

Import: Lets you insert station data from another database into the current system.

Close: Quits the Conversion utility.

Rebuild File menu

OTM administration can change the file structure of certain files. This can cause file errors during system maintenance. The Rebuild Files menu lets you check the individual files of system data and convert them to conform with the current file structure being used by OTM, if necessary:

All Systems: This option automatically searches the PC system for OTM systems and transforms selected files, if necessary.

Auto: This option automatically checks and transforms all files for each system, if necessary.

Select Files: This option lets you select OTM data files that will be checked for all systems, and transformed, if necessary.

Current System: This option checks selected files of the current system and transforms them if necessary.

Auto: This option automatically checks and transforms all files for the current system, if necessary.

Select Files: This option lets you select OTM data files that will be checked and transformed for the current system.

Help menu

The Help menu provides on-line Help for the Conversion utility.

Rebuilding files

The OTM administrator can modify the file structure used in OTM. This can result in File Errors during OTM processing. When this occurs, you can use the Conversion utility to rebuild the files, making their structure correspond with the current OTM file structure. In practice, the Conversion utility checks the structure of selected files and rebuilds only if necessary.

Accessing the files

To access the OTM data files for the Rebuild option, choose **Rebuild File > All Systems** or **Rebuild File > Current System**.

Each option appears a cascading secondary menu that lets you choose to automatically detect files that require rebuilding or to manually select files for rebuild.

If you choose to select files, a Select Files dialog box appears. This dialog box contains a multi-selection list of files that comprise the OTM data. Selected files are indicated by highlight bars. Use the Windows vertical scroll bar to browse the entire list of files. Click an item to toggle its selection status.

Click **OK** in the Select Files dialog box to start the rebuilding task for the selected files of all systems or the current systems as required.

Monitor rebuilding files

The Conversion utility checks all the selected files in each system and rebuilds all files it finds that require rebuilding. During this task, a status dialog box appears that informs you of the progress of the task.

Upon completion, a status of Success appears. At any time, click **Cancel** in the Status dialog box to halt the rebuilding task. This may result in some files not being rebuilt. Another attempt at Rebuilding Files now completes the task.

Importing station data

Station data is stored in accordance with the file structure and database rules defined in the OTM application. The Conversion Utility provides a merge function (Import) that lets you update station data, and add new stations, from a data source other than a system.

> ***Note:*** The merge function uses the DN or TN as the key. Any imported data must include a DN or TN field. If the supplied DN or TN is not currently used in the open system, the record is not added unless a valid unique Location field (LOC) value is supplied. This means that to create a new record, you must supply both a currently unused DN or TN and a unique Location

Data for import must have a Fields Definition file (default but not limited to files with the .FLD extension), as well as a comma delimited data file (default but not limited to files with the .TXT extension). The Fields Definition file identifies which items in the data file belong to which OTM fields.

> ***Note:*** The Fields Definition file must have the exact field names as defined in OTM. These can be found in the Select Data Field dialog box in the Global Update function. The fields are in the order in which the data is listed in the data file.

Considerations when merging key values and features

If you want to add or modify features for a particular record, you must identify a FTR field for each feature being modified. The values must be as identified in the Features dialog box when accessing multi-line telephone sets in the system. For example, Call Forward, when the forward DN is a four-digit number, is CFW 4 in the Meridian 1 or CS 1000 system.

If you want to add or modify key functions to a single line telephone, you must identify the key as **KEY** *n*, where *n* is the key number (include the space). If the value represents a Single Call Ringing key, then the field entry is **SCR** *nnnn*, where *nnnn* is the selected DN.

Import process

The import feature included in the Station Administration application is designed to allow you to enter data into the Station Administration database from a standard Comma Separated Value (CSV) file. This file type is also known as a Comma Delimited file. The CSV data file format is supported by a number of standard database and spreadsheet applications including:

- Excel
- Access
- Lotus 1-2-3

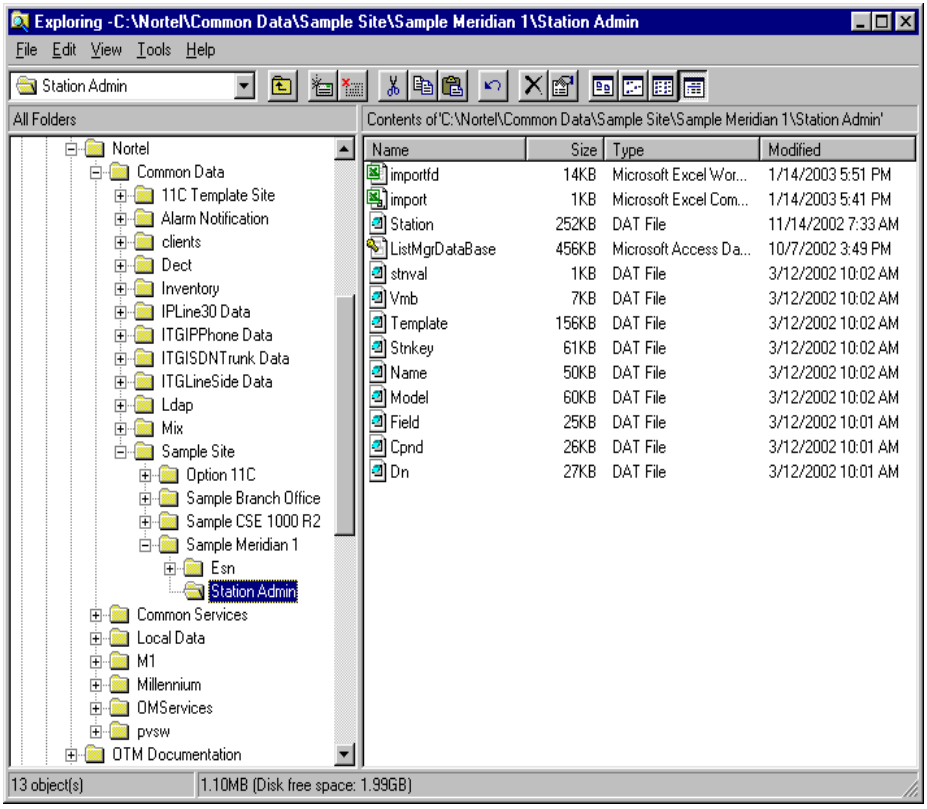
Based on the information provided in the data file, the import feature either updates or an existing station record or adds a new station record in the OTM Station Administration database.

The values in the import data file update the record without validation. It is your responsibility to ensure that the data being imported is valid. Remember that almost all data values must be all uppercase with the exception of Administration fields.

Backup existing database

Prior to importing new data into the Station Administration database, make a backup of the existing database. To backup the database, see "Backup and Restore" on page 284.

Figure 213
Station Admin data folder



Files required for import

The process for importing data into Station Administration requires two files, a data file and a field file. The data file contains the information that you are importing. Each line in the data file represents a unique station record, and each column contains a specific data field. The field file provides the field names and column order of the data fields.

Data file format

The data file must be in the standard ASCII CSV format. By design, the import module looks for data files with a .txt extension; however, you can request that the import module read any filename. A typical import file would look something like the following:

7503,Franco,Audet,Sales
7501,Sun,Chen,Accounting
7502,Carla,Estrada,Accounting
7505,George,Harris,Marketing North America
7500,Paul,Jones,Sales

If the program used to create the data file provides quotation marks around the data fields, as well a placing commas between the fields, this file format can also be used. The import feature will remove the quotation marks before storing the data in the station record. A typical entry in this file format would look like the following:

“7503”,”Franco”,”Audet”,”Sales”

Field file format

The field file tells the import module the field names and order of the data in the data file. By design, the import module looks for files with a .fld extension; however, this can be overridden. The field file is a simple list of name with one record per name. The field file can also be a dBase structure extended file.

The import module looks for a field name on each line, and like the data file format, quotation marks are ignored.

The field names in this file must correspond to field mnemonics as they appear in Table 15 on page 202.

Required fields

The import module can be used to either update data on existing stations or to add new stations to the OTM Station Administration database. In addition to the data fields being imported, the following data files must be included in the data file that is being imported:

- Updating existing telephone records
  - DN - Primary Directory Number, or
  - TN - Primary Terminal Number
- Adding new telephone records
  - DN - Primary Directory Number, or
  - TN - Primary Terminal Number
  - LOC - Location
  - INST - Instrument type

Data fields

DN or TN

The data file must include a DN or TN field, and it must be the first field in the file. The DN or TN field is used as a merge key. That is, the DN or TN field is used to find the record in the OTM Station Administration database that is to be updated with the imported values. The import module matches on Primary DN or TN only. Table 28 outlines the DN designated as the Primary DN for OTM records.

Table 28
Primary DN designation

General instrument type (INST)	Examples	Primary DN
Single-line analog (500/ 2500-type) telephones	500, 2500	DN
Digital telephones	M2006, M2008, M2317, M2616, M3000, M3901, M3902, M3903, M3904	DN assigned to Key 0. For example, the Primary DN is 2000 on a station with Key 0 = SCR 2000
ACD telephones	M2216ACD, M3905	ACD Position ID entered on Key 0. For example, the Primary DN is 7001 on a station with Key 0 = 7000 7001

If a DN or TN appears as the Primary DN on more than one station in the database, the module updates the first appearance in the database. If a DN or TN in the import file does not appear in the database, and both location (LOC) and instrument type (INST) are

included in the import record, the module creates a new station record. If a DN or TN in the import file does not appear in the database, and LOC and INST are not provided, OTM generates an error message.

Since the DN or TN is used as a merge key, it cannot be updated on single-line stations in OTM. Because Key 0 can be updated as a field independent of the DN, the Primary DN on multi-line stations can be updated. In this case, if an import record has a DN of 4000 and Key 0 is 4001, and the record is imported into a system that does not have a station with a Primary DN of 4000, a new station record is created (assuming that LOC and INST are included in the import record).

LOC

The location field (LOC) must be unique for each station in OTM. Ensure that there are no duplicate entries before importing the data file. The location field can be updated on existing stations by importing an alternative value.

INST

The instrument type (INST) must match the types available in OTM. Table 29 provides a list of valid INST values.

Table 29
Instrument type values and descriptions (Part 1 of 2)

INST	Description	INST	Description	INST	Description
2500	Digitone Standard	M8009	8009 Analog	UNITY1	Unity I
500	Analog Standard	M8314	8314 Analog	UNITY2	Unity II
M2006	2006 Digital	M8417	8417 Analog	UNITY3	Unity III
M2008	2008 Digital	M9009	9009 Analog	DCS	Digital Cordless Set
M2009	2009 Digital	M9216	9216 Analog	2002	Nortel IP Phone 2002
M2016S	2016 Secure Digital	M9316	9316 Analog	2004	Nortel IP Phone 2004
M2018	2018 Digital	MCU	Meridian Communications Unit	2050	Nortel IP Softphone 2050
M2018S	2018 Secure Digital	QSU60	SL-1 Telephone	M3901	M3901 Digital
M2112	2112 Digital	QSU61	SL-1 Digit Display Telephone	M3902	M3902 Digital
M2216-1	2216 ACD-1 Digital	QSU7	SL-1 ACD Telephone	M3903	M3903 Digital
M2216-2	2216 ACD-2 Digital	QSU71	Meridian 1109 Compact	M3904	M3904 Digital

Table 29
Instrument type values and descriptions (Part 2 of 2)

INST	Description	INST	Description	INST	Description
M2317	2317 Digital	QSU73	Meridian 1309 Compact	M3905	M3905 Call Center Digital
M2616	2616 Digital	R232	RS-232	PCA	Personal Call Assistant
M3000	3000 Touchphone	R422	RS-422		
2001	Nortel IP Phone 2001	CPVIP	CallPilot Virtual IP Ports		

The instrument type cannot be updated for existing stations by importing an alternative instrument type. The only way to modify the instrument type is to delete the existing station and build a new station record.

Multiple types of stations can be updated using the same data file when the fields being imported are not unique to an instrument type. When importing a feature that is valid for a specific instrument type, a separate data file must be used. For example, when importing keys on digital stations, the data file should not include analog stations since keys are not valid on analog stations.

TN

The TN field must be input the same way that it would be input into OTM or a TTY using Loop, Shelf, Card, Unit addressing, for example, 4 0 0 0. For Option 11 and CS 1000 systems, the TNs are entered as:

Loop = Card Slot
Shelf = Always 0
Card = Always 0
Unit = Unit on the Card

For example, when a Digital Line card is placed in the second slot of a Meridian 1 PBX 11C Cabinet, the TN for the first unit on this card is 2 0 0 0.

Class of Service fields

The following guidelines must be followed when entering values for Class of Service fields:

- All entries must be in CAPITAL letters.
- CLS fields cannot be left blank. The default for the CLS, as well as the changes, must be shown.
- All entries are made in mnemonic format.
- All entries must be valid for the CLS. For a list of the allowable entries for CLS, see *Software Input/Output: Administration* (553-3001-311).

Keys

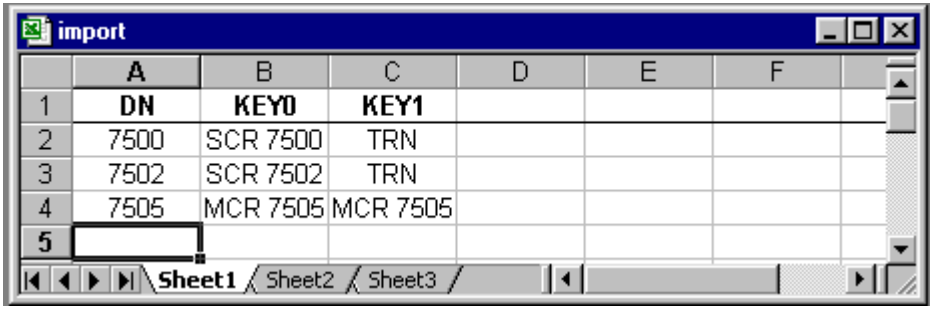
If you want to add or modify Key functions on a multi-line telephone, you must identify the key as KEY *n* in the field file where *n* is the Key number. Be sure to include the space between KEY and the number. If the value entered represents a Single Call Ringing key, the entry would be SCR *nnnn* where *nnnn* is the DN.

The following guidelines must be followed when entering values for Keys:

- Do not attempt to import Keys and Features in the same file. Import using separate files.
- All entries must be in CAPITAL letters.
- Blank entries for Keys are allowed.
- All entries are made in mnemonic format.
- All entries must be valid for the Keys and allowed for the instrument type. For a list of the allowable entries for Keys, see *Software Input/Output: Administration* (553-3001-311).

Figure 214 on page 482 provides and example of a Key import file.

Figure 214
Example file for updating Key 0 and Key 1



Features (FTR)

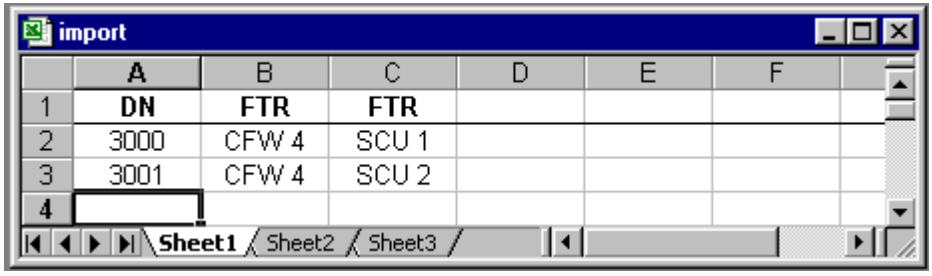
If you want to add or modify Features (FTR) for a particular DN, you must identify a FTR field for each feature being modified. The values must be in the same format that is used in the Features dialog in LD 11 when accessing a single -line telephone. For example, Call Forward when the forward DN is a four-digit number would be “CFW 4”.

The following guidelines must be followed when entering values for Features:

- Do not attempt to import Features and Keys in the same file. Import using separate files.
- All entries must be in CAPITAL letters.
- Blank entries for FTRs are allowed (except DCS sets).
- All entries are made in mnemonic format.
- All entries must be valid for the FTRs and allowed for the instrument type. For a list of the allowable entries for FTRs, see *Software Input/Output: Administration* (553-3001-311).

Figure 215 on page 483 provides and example of a FTR import file.

Figure 215
Example file for updating Call Forward and Speed Call features



Administration fields

Table 30 shows the available Administration fields along with the field names and the number of characters allowed. All entries allow alpha-numeric input except Equipment Cost, Category, and Listed Directory Number Index.

Table 30
Administration fields (Part 1 of 2)

Description	Field name	Size (characters)
First Name	FNAME	16
Last Name	LNAME	20
Location	LOC	12
Department	DEPT	31
Division	DIV	10
Equipment Cost Format is: 0000.00 (i.e., $5.00 is 0005.00)	ECOST	6
Billing Authorization Code	ACODE	10
Cost ID	COSTID	1
User Fields: User Field 0	USER0	12
User Field 1	USER1	12
User Field 2	USER2	12
User Field 3	USER3	12
User Field 4	USER4	12
User Field 5	USER5	12
User Field 6	USER6	12
User Field 7	USER7	12
User Field 8	USER8	12
User Field 9	USER9	12
Category Allowable entries are: Regular, Bridge, Model, Hot Jack, Prewire	CAT	N/A
Color	COLOR	8
Power Fail Trunk TN	POWERFAIL	11

Table 30
Administration fields (Part 2 of 2)

Description	Field name	Size (characters)
Listed Directory Number Index Allowable entries are: 1, 2, 3	LDNINDEX	1
Comments	COMMENT	64

Limitations

The following limitations apply when using the import function in OTM:

- No validations are applied to the station information being imported.
- Features such as MARP, CPND, and VMB must still be assigned using the OTM user interface.
- A 500 type telephone with DIG instead of a DN cannot be imported.
- TNs or DNs cannot be auto-assigned to stations added using import.
- Templates cannot be used with imported data.

Example

The following example is designed to help explain the general concept used when importing station data. The example shows Microsoft Excel* being used to generate the data file and the field file; however, the process would be the same for any application capable of producing a comma separate values (CSV) file.

Background information

Three employees in your company are in the process of moving into existing offices. The telephone already exist and are extensions 7500, 7502, and 7505. You have an Excel spreadsheet showing the First Name, Last Name, and Department for each of these

employees, but you must also update two Class of Service values. Table 31 appears the available information.

Table 31
Background information for data import example

First name	Last name	Extension	Department	Access Restriction	Call Forward External
Paul	Jones	7500	Sales	Unrestricted	Allowed
Carla	Estrada	7502	Accounting	Unrestricted	Allowed
George	Harris	7505	Marketing	Conditionally Toll Denied	Denied

Identifying data fields

The information provided must be related to the data field names that are used within Station Administration. OTM data field names are listed in Table 15 on page 202. Table 32 provides a summary of the field names used in this example.

Table 32
Field names used in data import example

Field name	Name used in example
FNAME	First name
LNAME	Last name
DN	Extension
DEPT	Department
CLS	Access Restriction
CFXA	Call Forward External

Valid entries for data fields

The Import feature requires that the data be entered in the format that is understood by systems. The values entered must match the entries that would be accepted by the system if entered using the overlays. In addition, these entries are always uppercase characters. The only exception to this rule are the Administration fields described in Table 30 on page 484. Administration fields can contain data in both uppercase and lowercase characters. For additional information on valid entries for a specific field, refer to *Software Input/Output: Administration* (553-3001-311).

Table 33 lists the valid entries for each of the fields in this example.

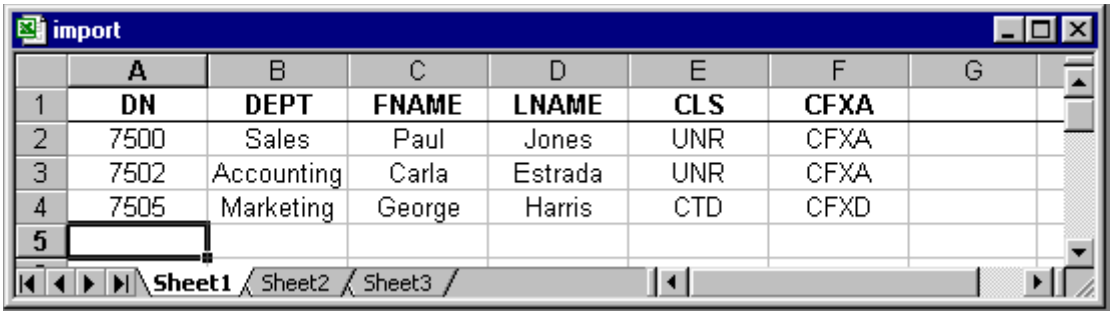
Table 33
Valid entries for fields used in data import example

Field name	Valid entry
FNAME	Maximum 20 characters
LNAME	Maximum 16 characters
DN	Maximum 4 digits or maximum 7 digits with Directory Number Expansion (DNXP) package 150
DEPT	Maximum 30 characters
CLS	CTD - Conditionally Toll Denied CUN - Conditionally Unrestricted FR1 - Fully Restricted class 1 FR2 - Fully Restricted class 2 FRE - Fully Restricted SRE - Semi-Restricted TLD - Toll Denied UNR - Unrestricted
CFXA	CFXD - Call Forward All Calls to an external number is denied CFXA - Call Forward All Calls to and external number is allowed

Figure 216 shows how the Excel spreadsheet would appear with the information in this example entered in the correct format.

Note: The TN or DN must be the first field in this file.

Figure 216
Spreadsheet containing information for the data import example


import
A B C D E F G
1 DN DEPT FNAME LNAME CLS CFXA
2 7500 Sales Paul Jones UNR CFXA
3 7502 Accounting Carla Estrada UNR CFXA
4 7505 Marketing George Harris CTD CFXD
5
Sheet1 Sheet2 Sheet3

Creating a data file

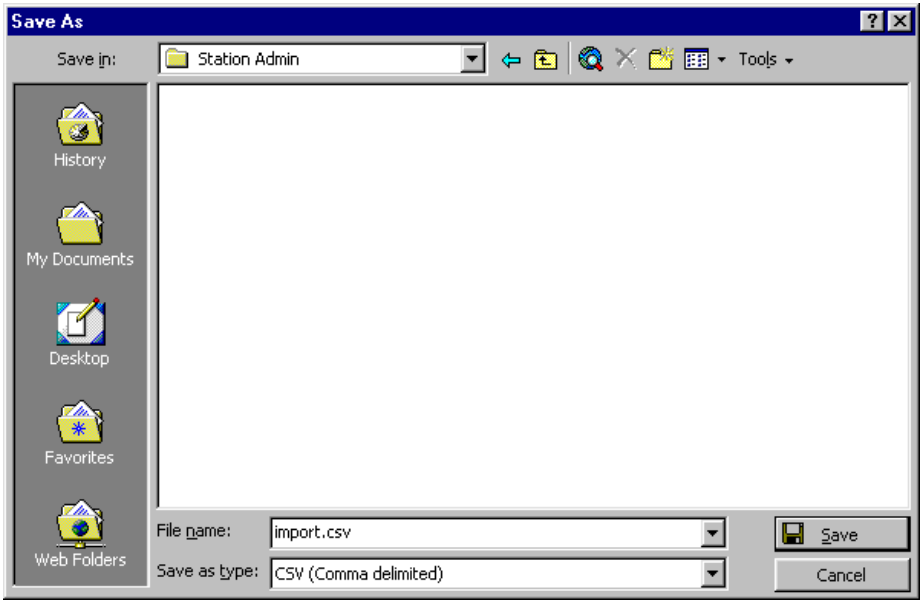
Once you have entered all of the required information into the spreadsheet, you must save the file in the CSV format. To do this in Excel:

Procedure 100
Creating a data file

1 Select **File > Save As**.

The dialog box shown in Figure 217 on page 489 opens.

Figure 217
The Save As dialog box in Excel



2 Enter a name for the file in the File name text box.

In this example the name is *import*.

3 Use the Save as type drop-down list to select CSV (Comma delimited) (*.csv).

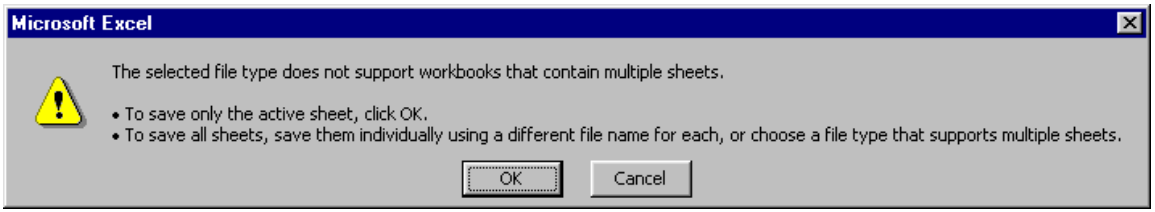
4 Use the Save in drop-down list to select a directory for the saved file that will be easy to locate.

In this example, the directory used is the Station Admin directory for the Site and System that is going to receive the data. The path is Nortel\Common Data\Site Name\ System Name\ Station Admin. This will be the default directory when the Import feature is accessed for the Site and System.

5 Click **Save** to save the file.

The message shown in Figure 218 on page 490 appears. Click OK to continue saving the file.

Figure 218
Excel save active sheet only alert


Microsoft Excel
The selected file type does not support workbooks that contain multiple sheets.
• To save only the active sheet, click OK.
• To save all sheets, save them individually using a different file name for each, or choose a file type that supports multiple sheets.
OK
Cancel

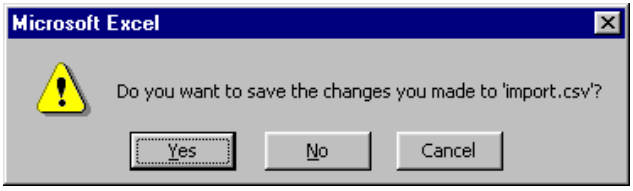
6 Close the Excel spreadsheet.

Before you can import the file into OTM, you must close the spreadsheet. If you do not close the spreadsheet, Excel will generate a sharing violation when OTM attempts to open the file.

Since the file was saved in a format other than the standard Excel format, the message shown in Figure 219 appears. Click No to close the file in its current format.

Do not click Yes. If you click Yes, Excel will convert the CVS file to a standard Excel formatted file that OTM will not be able to import.

Figure 219
Excel save changes dialog box

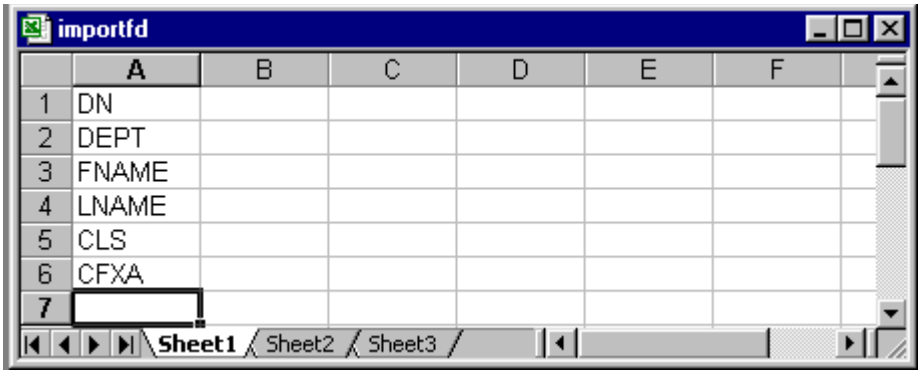


End of Procedure

Creating a field file

Create a new spreadsheet that contains the field name in the order in which they are entered in the data file. Place all of the field names in the first column of the spreadsheet as shown in Figure 220 on page 491.

Figure 220
Spreadsheet containing field names



Save the spreadsheet as a CSV file using the same procedure outlined for saving the data file. For this example the field file is named *importfd.csv*.

Do not use the same name as the name selected for the data file.

Note: The TN or DN must be the first field in this file.

Using the Import feature

The following procedure describes the process used to import the field file created in this example into OTM.

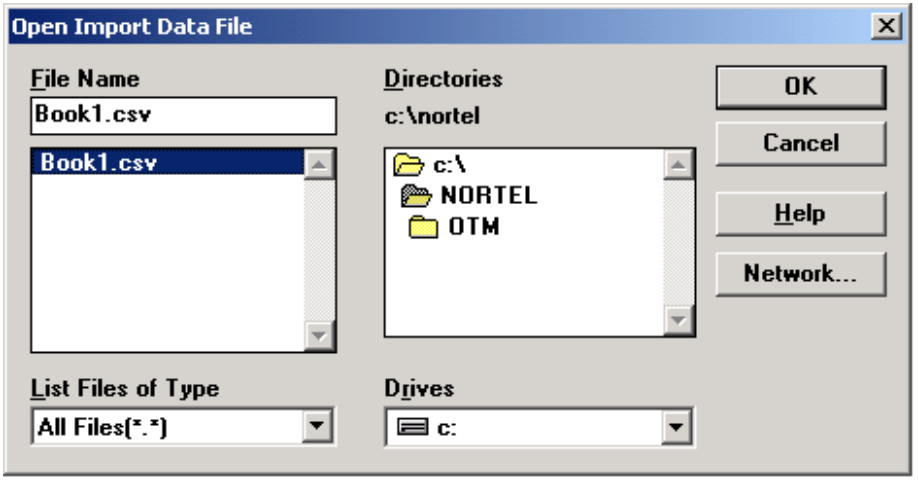
Procedure 101
Using the Import feature

1 From within the Station Administration application, select **File > Conversion Utility.**

2 From within the Conversion Utility module, select **File > Import > Data Files.**

The Open Import Data File dialog box opens as shown in Figure 221 on page 492.

Figure 221
Open Import Data File dialog box



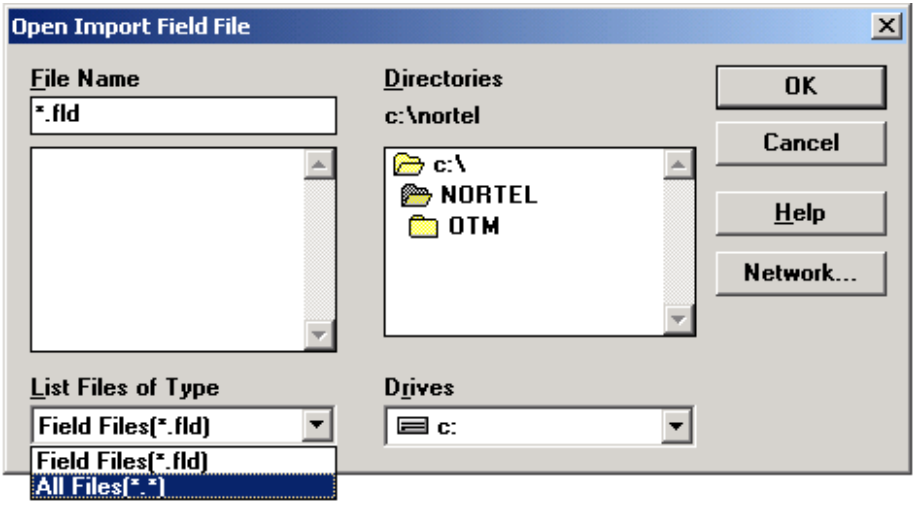
3 From the List Files of Type drop-down list, select **All Files** (*.*)

4 Choose the directory where you stored the data file and select the file to be imported.

5 Click **OK**.

The Open Import Field File dialog box opens as shown in Figure 222.

Figure 222
Open Import Field File dialog box



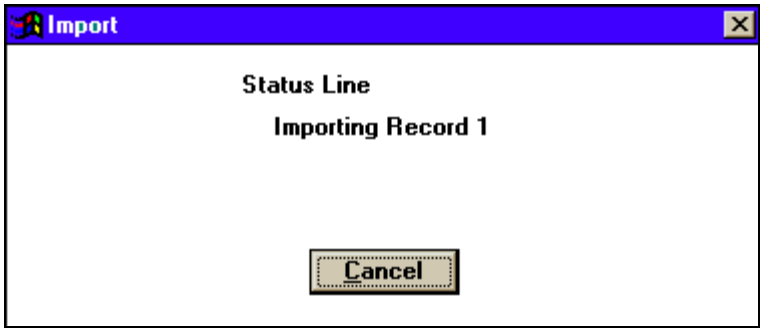
6 From the List Files of Type drop-down list, select **All Files** (*.*)

7 Choose the directory where you stored the field file and select the file to be used for the import process.

8 Click **OK**.

The import process begins. OTM provides a status dialog box that indicates the number of stations that have been imported as shown in Figure 223.

Figure 223
Import status dialog box



Clicking Cancel before the import process completes will stop the process. However, all records that were updated or added prior to cancellation will be saved in the Station Administration database.

9 When the import has finished, click **OK** in the Import dialog box.

End of Procedure

Error messages

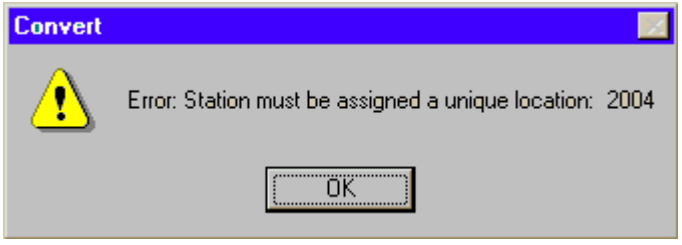
This section provides examples of three error messages that may be encountered while using the Import feature:

The message shown in Figure 224 appears when the Location code (LOC) is not unique or if the station record is being updated by another user. To avoid this message, ensure that the Location used does not already exist in OTM, that all of the records being imported have unique Location codes, and that other users are not attempting to update the stations that are being imported.

Figure 224
Import error message - duplicate key value

The message shown in Figure 225 appears when the DN in the import record is not found in the Station Administration database and a Location code (LOC) is not provided in the import record that would allow OTM to build a new station. If a new station record should have been created, ensure that the import record contains a Location code (LOC) and Instrument Type (INST) in addition to the DN. If the purpose of the import was to update an existing DN, this message indicates that the DN was not found.

Figure 225
Import error message - no Location code (LOC) value in file



The message shown in Figure 226 appears when the DN in the import record is not found in the Station Administration database and an Instrument Type (INST) is not provided in the import record that would allow OTM to build a new station. If a new

station record should have been created, ensure that the import record contains a Location code (LOC) and Instrument Type (INST) in addition to the DN. If the purpose of the import was to update an existing DN, this message indicates that the DN was not found.

Figure 226
Import error message - no Instrument Type (INST) value in file

Generating reports

Overview

The Report Generator module lets you create, view, print, and change custom reports. Access the Report Generator module by choosing File - Reports in the CPND and Station Administration modules.

OTM supplies several standard report forms for reporting OTM data. In addition, the Reports Generator module contains a form editor that lets you create custom report forms or edit existing forms. It also contains a viewer that lets you print reports or browse reports on the screen. A report executor lets you run the reports to the viewer for screen display, to a file, or to a printer. Custom selectable criteria allow you to tailor the report listing.

Reports considerations

Reports and text files

All log report activity is performed, by default, in the current working directory for the System (the system subdirectory in your PC system). Other reports are sent to the PC directory of your choice. Here is a list of text files with the appropriate extension found in the working directory:

- Report Forms (*filename*.FRM)

- Reports (*filename*.TXT)
- Communications Logs (*filename*.LOG)

You need only supply the *filename* when prompted to save these files; OTM automatically supplies the appropriate extension.

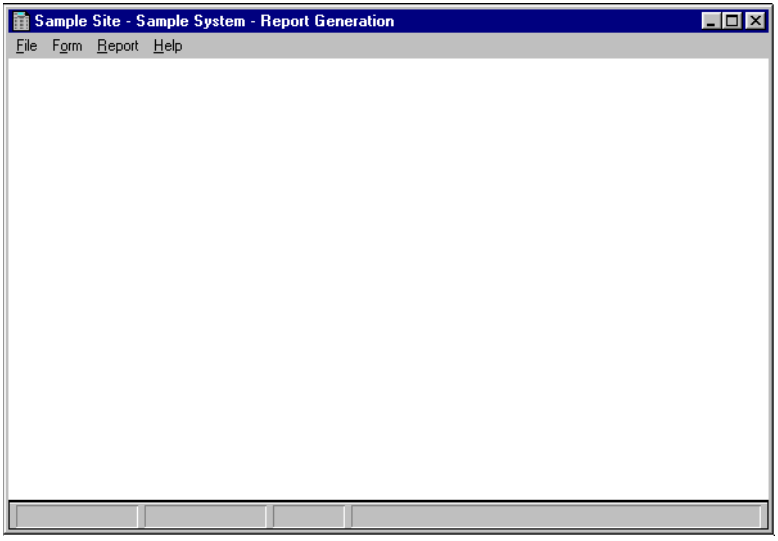
- Validation Data (you provide the extension)
- Designation Strips (you provide the extension)

The OTM Report Generator requires that a printer be configured in the Windows software environment, although it is not necessary for the PC running OTM to be equipped with a printer.

Starting the Reports function

To display the OTM Report Generation window (Figure 227 on page 496), select **File > Reports > Report Generator** in the Station or CPND module .

Figure 227
Report Generation window



There is no data in the work area when the window first appears. The window contains a menu bar with drop-down menus that let you perform global actions within the Report Generator:

- File Menu
- Form Menu
- Report Menu
- Help Menu

File menu

The only function available from this menu is the following:

Close: Closes the Report Generator.

Forms menu

This menu lets you choose a current report form or create a new form.

New Report Format...: Lets you design a new form for a report.

Open Existing Report Format...: Lets you open a predefined form for the selected data in the system.

Reports menu

This menu allows access to the report executor.

Run Report...: appears a dialog box that lets you access a report form that you can run (to the screen, to a printer, or to a file).

Running reports

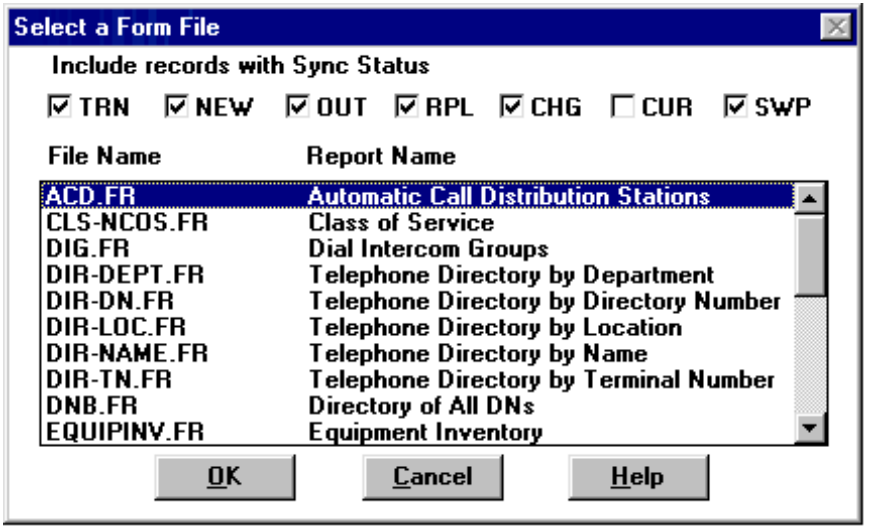
Running a report involves selecting a report to run and selecting a destination for the report. Selection criteria for the records you want to choose are contained within the report form. If you desire different criteria, you can edit the form or create a new one. See “Report criteria” on page 524. You can send a report to a viewer for screen display, to a file, or to a printer.

Select a report

To select a report to run, select **Report > Run Report** in the Report Generator.

The Select a Form File dialog box opens with a single-choice scrollable list of report forms on your system (Figure 228 on page 498).

Figure 228
Select a Form File dialog box



Some reports in the list may be reports you have defined or modified for your needs. Default reports supplied with OTM include the following:

- Automatic Call Distribution Stations
- Class of Service
- Dial Intercom Group
- Telephone Directory by Department

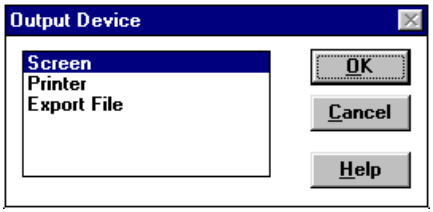
- Telephone Directory by Directory Number
- Telephone Directory by Location
- Telephone Directory by Name
- Telephone Directory by Terminal Number
- Directory of All DNs
- Equipment Inventory
- Hunt Patterns
- Key Assignments
- Message Centers
- CPND Name by Directory Number
- CPND Name by Name
- CPND Name by Location
- CPND Name by Synchronization Status
- Telephone Directory (Phone Book)
- Private Line
- List of Power Failure Phones
- Ringing Number Pickup Group
- Speed Call Groups
- System Speed Call Groups
- Used DNs

The currently selected form is highlighted. Select a form and click **OK** to run a report using the currently selected form.

Select a destination

When you have selected a form and have chosen **Report > Run Report**, an Output Device dialog box provides a list of possible destinations for the report (Figure 229).

Figure 229
Output Device dialog box



The dialog box appears a list of destinations for the report:

- Screen
- Printer
- Export File

Select a destination, and then click **OK** to run the selected report.

View report

If you select Screen for the report destination, a viewer appears with the report in the work area (Figure 230 on page 501).

The Viewer has the following menus:

File: Lets you display a report summary, print the report, or exit the viewer.

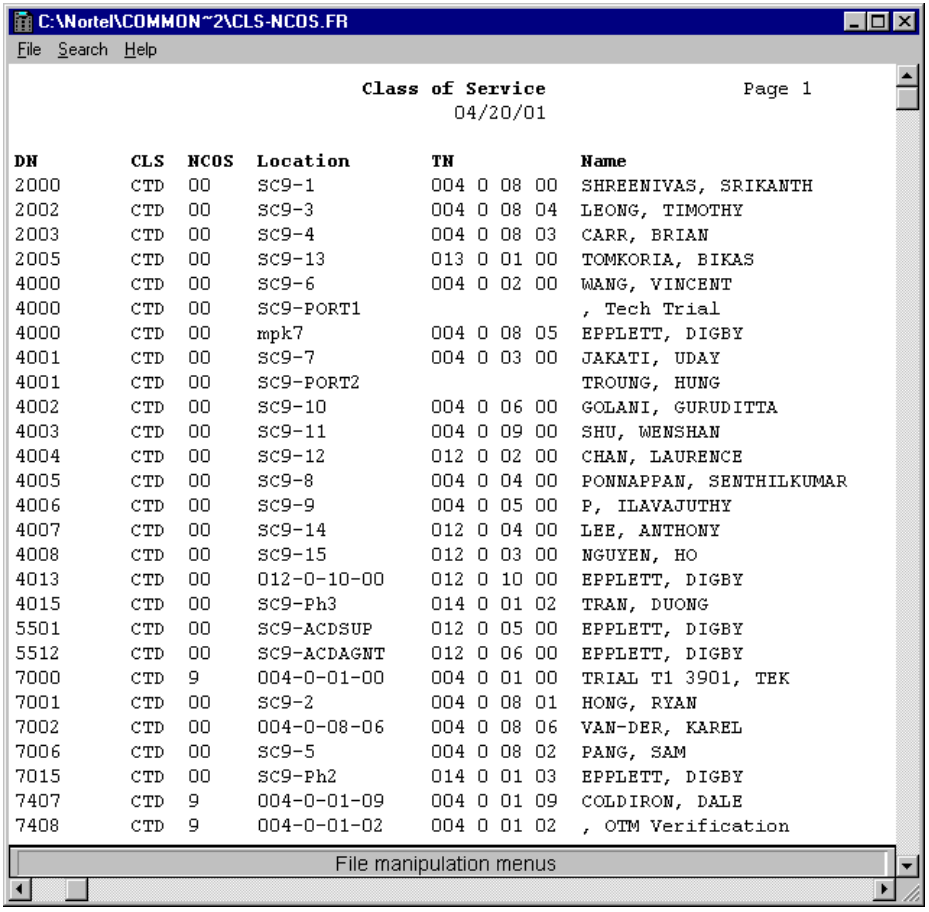
Search: Lets you find text contained in the report.

Help: Lets you access online Help for the viewer.

See “OTM file Viewer” on page 503 for more information.

You can print the report from the viewer to the printer defined in the report form, or to a printer you choose from the Viewer. You can also save the report to a file selected from the Viewer.

Figure 230
Example Report in the Viewer


C:\Nortel\COMMON~2\CLS-NCOS.FR
File Search Help
Class of Service Page 1
04/20/01
DN CLS NCOS Location TN Name
2000 CTD 00 SC9-1 004 0 08 00 SHREENIVAS, SRIKANTH
2002 CTD 00 SC9-3 004 0 08 04 LEONG, TIMOTHY
2003 CTD 00 SC9-4 004 0 08 03 CARR, BRIAN
2005 CTD 00 SC9-13 013 0 01 00 TOMKORIA, BIKAS
4000 CTD 00 SC9-6 004 0 02 00 WANG, VINCENT
4000 CTD 00 SC9-PORT1 , Tech Trial
4000 CTD 00 mpk7 004 0 08 05 EPPLETT, DIGBY
4001 CTD 00 SC9-7 004 0 03 00 JAKATI, UDAY
4001 CTD 00 SC9-PORT2 TROUNG, HUNG
4002 CTD 00 SC9-10 004 0 06 00 GOLANI, GURUDITTA
4003 CTD 00 SC9-11 004 0 09 00 SHU, WENSHAN
4004 CTD 00 SC9-12 012 0 02 00 CHAN, LAURENCE
4005 CTD 00 SC9-8 004 0 04 00 PONNAPPAN, SENTHILKUMAR
4006 CTD 00 SC9-9 004 0 05 00 P, ILAVAJUTHY
4007 CTD 00 SC9-14 012 0 04 00 LEE, ANTHONY
4008 CTD 00 SC9-15 012 0 03 00 NGUYEN, HO
4013 CTD 00 012-0-10-00 012 0 10 00 EPPLETT, DIGBY
4015 CTD 00 SC9-Ph3 014 0 01 02 TRAN, DUONG
5501 CTD 00 SC9-ACDSUP 012 0 05 00 EPPLETT, DIGBY
5512 CTD 00 SC9-ACDAGNT 012 0 06 00 EPPLETT, DIGBY
7000 CTD 9 004-0-01-00 004 0 01 00 TRIAL T1 3901, TEK
7001 CTD 00 SC9-2 004 0 08 01 HONG, RYAN
7002 CTD 00 004-0-08-06 004 0 08 06 VAN-DER, KAREL
7006 CTD 00 SC9-5 004 0 08 02 PANG, SAM
7015 CTD 00 SC9-Ph2 014 0 01 03 EPPLETT, DIGBY
7407 CTD 9 004-0-01-09 004 0 01 09 COLDIRON, DALE
7408 CTD 9 004-0-01-02 004 0 01 02 , OTM Verification
File manipulation menus

Print report

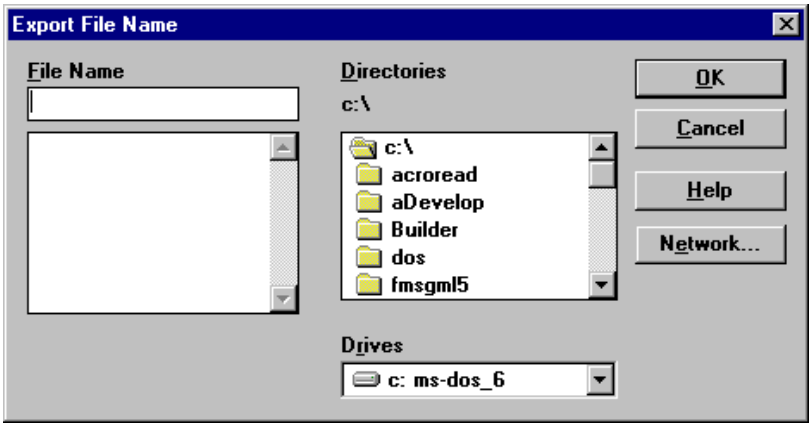
If you selected Printer for the report destination, the OTM Report Generator uses the Windows print function to direct the report to its default printer. The default printer for the report is identified in the form when it is created or edited. If you want to check or change the printer destination or setup, you must do this from the Form editor before you run the report. Alternatively, you can send the report to the screen and print from the viewer.

During printing, a Printing status box appears. You can stop the print job by clicking Cancel. A Report Viewer status box alerts you when the job is finished. Click OK to return to the Report Generator.

Export report

If you chose Export File for the report destination, the report output can be saved in a comma-delimited ASCII file. Export File appears a dialog box that lets you choose a name for the report file (Figure 231).

Figure 231
Export File Name dialog box



You can enter a file name up to eight characters. Click OK to send the report to the Viewer. See “View report” on page 500 for more information. Filename.TXT, a comma-delimited text file with the Filename as entered in the text box, is saved to the current PC directory.

OTM file Viewer

Overview

The Viewer lets you browse, print, and save OTM files accessed during Station Administration tasks. You cannot access the Viewer as a separate module. It is invoked when you attempt to print or display files created during OTM database administration. The files that can be viewed include the following:

- Reports
- Designation Strips
- Station Validation Log
- Communication Logs
- Station and CPND Administration list views

Viewing a file

When the File Viewer starts, the scrolling Viewer window contains the data from a file created during OTM database administration (Figure 232 on page 504). The Viewer does not allow editing, so the viewed data is in a fixed format.

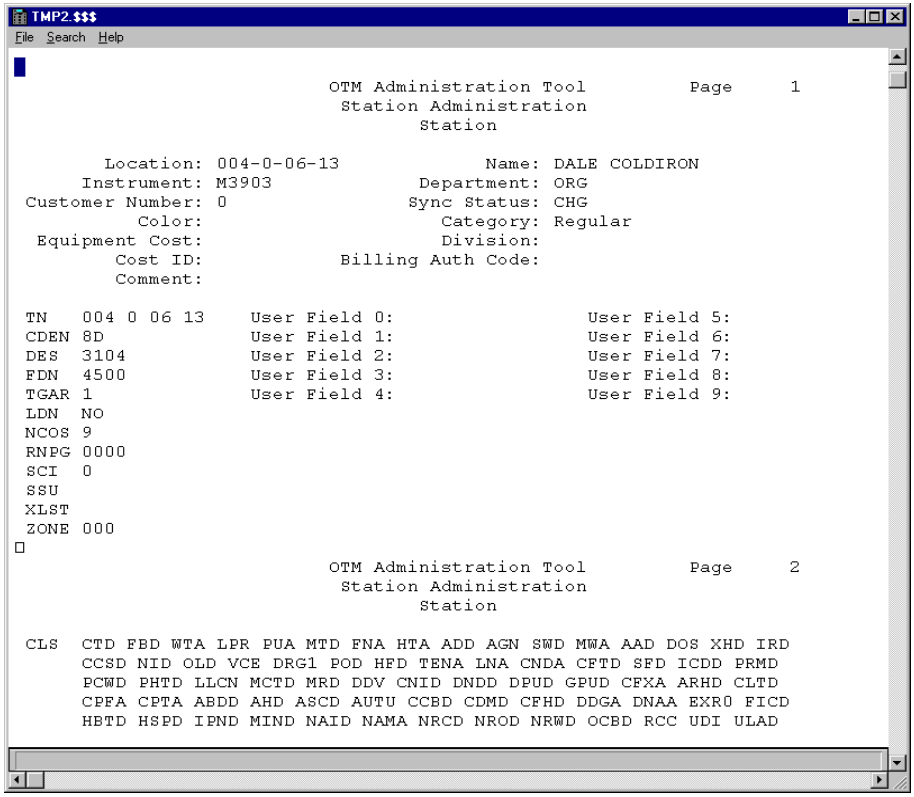
You can browse and print the data using the menus, as follows:

Viewer File menu

The File menu lets you display a file summary, save the file to a selected directory, print the file, or exit the viewer.

- **Save as:** Lets you save the displayed data as a text file to your PC system.
- **Summary:** appears a file summary of the displayed data.

Figure 232
File Viewer window


TMP2.$$$
File Search Help
OTM Administration Tool Page 1
Station Administration
Station
Location: 004-0-06-13 Name: DALE COLDIRON
Instrument: M3903 Department: ORG
Customer Number: 0 Sync Status: CHG
Color: Category: Regular
Equipment Cost: Division:
Cost ID: Billing Auth Code:
Comment:
TN 004 0 06 13 User Field 0: User Field 5:
CDEN 8D User Field 1: User Field 6:
DES 3104 User Field 2: User Field 7:
FDN 4500 User Field 3: User Field 8:
TGAR 1 User Field 4: User Field 9:
LDN NO
NCOS 9
RNPG 0000
SCI 0
SSU
XLST
ZONE 000
OTM Administration Tool Page 2
Station Administration
Station
CLS CTD FBD WTA LPR PUA MTD FNA HTA ADD AGN SWD MWA AAD DOS XHD IRD
CCSD NID OLD VCE DRG1 POD HFD TENA LNA CNDA CFTD SFD ICDD PRMD
PCWD PHTD LLCN MCTD MRD DDV CNID DNDD DPUD GPUD CFXA ARHD CLTD
CPFA CPTA ABDD AHD ASCD AUTU CCBD CDMD CFHD DDGA DNAA EXR0 FICD
HBTD HSPD IPND MIND NAID NAMA NRCD NROD NRWD OCBD RCC UDI ULAD

- **Print:** Sends the file to the default printer (the printer is normally the default printer as defined in Windows). However, for reports, the printer is defined in the form.
- **Printer Setup:** Allows you to select a print destination and set printer options.
- **Close:** Closes the Viewer and returns to the window that invoked it.

Viewer Search menu

The Search menu lets you find a text string that might be contained in the displayed data.

- **Find:** Lets you define a text string to find. The Find function is not case sensitive.
- **Find Again:** Lets you find the next occurrence of the currently defined string. This option is dimmed until you have searched for a string.

Changing viewed data

The data displayed in the viewer is in a fixed format, defined in OTM, for the file being viewed.

Browsing the file

The OTM Viewer is a line viewer with the current line highlighted. You can use the arrow keys or <Page Up> and <Page Down> to move the highlight one line or one screen at a time. You can also use the Windows vertical scroll bars to scroll the report, moving the highlight bar as you scroll. The Windows horizontal scroll bar lets you browse entire lines when the lines are too long for the window.

Use the Search menu to find selected text. A successful Find highlights the line containing the search text.

Save As

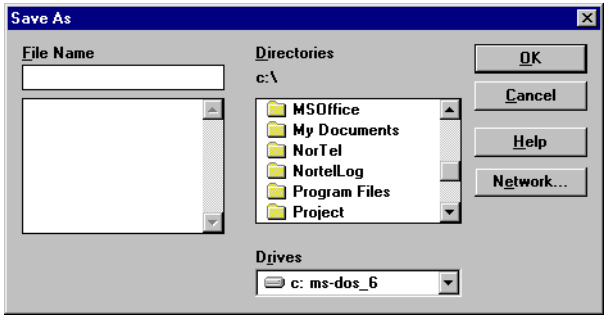
The file appears in the Viewer with a default file name in the title bar. You can save the data as an ASCII text file.

Choose **File > Save As** to save the current file with a different name or location.

Select a file name

The Save As dialog box (Figure 233 on page 505) is the standard window used to specify the file name and file location (for a full description of this dialog box, refer to your Windows documentation). The dialog box contains a scrollable drop-down list of disks that your PC can access. Select a disk to display the list of directories on the disk in a scrollable Directories list field. Select a directory to display a scrollable list of files in that directory. Select an item from the File Name list or type in a file name.

Figure 233
Save As dialog box



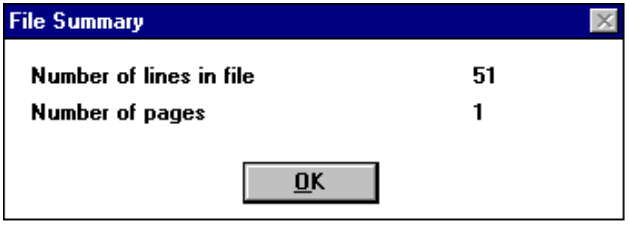
At any time, click **Cancel** to return to the Viewer without saving the file. Click **OK** to save the file with the specified file name.

The saved file uses the current default Windows font for character formatting. Any character formatting in the original file (from a Report, for example) is not saved.

Display a file summary

To display a File Summary status box (Figure 234), select **File > Summary** .

Figure 234
File Summary status box



This summary gives the number of lines for a text file (or number of records for a database report file) and the number of pages in the file.

Click **OK** in the status box to return to the Viewer.

Print from the Viewer

You can print the file (exactly as displayed) to a default printer directly, or you can select another printer for the task.

To print the contents of the Viewer to one of the following destinations, select **File > Print**:

- If the Viewer is displaying a report, the print destination is the destination defined in the report. If your PC cannot find this printer, OTM appears a status message. Click **OK** in the Status message box to return to the Viewer.
- If no printer is defined in the file being viewed, the print destination is the current printer defined in Windows. This can be the Windows default or a printer selected in the File - Print Setup option of the Viewer.

A progress status message appears while the file is printing (or sent to a print spool if applicable).

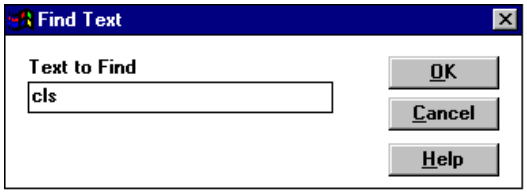
Click **Cancel** in the Status box to stop printing. When the task is complete, OTM returns to the Viewer window.

Search the file

Procedure 102
Searching the file

1 Select **Search > Find** to display a dialog box that lets you enter text you want to find (Figure 235). If Find Again is available, the dialog box contains the previous search data.

Figure 235
Find Text dialog box



2 Click **OK** to accept the data in the dialog box and proceed with the search. Click **Cancel** to return to the Viewer window. Click **Help** to display online Help for this dialog box.

The text box accepts any input. The find function is not case sensitive.

The Viewer highlights the line containing the first occurrence of the text that you specified in the Find Text dialog box. The Find function always starts at the top of the report, regardless of the current cursor position.

3 When the first search is complete, Search > Find Again is available. If you choose this item, the highlight bar moves to the next occurrence of the text. You can repeat this until a status message indicates that are no more occurrences.

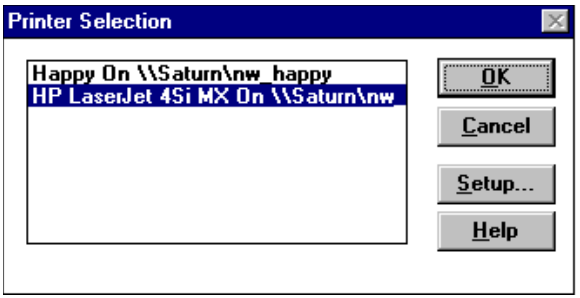
4 Click **OK** in this status box to return to the Viewer.

End of Procedure

Printer setup

To define the printer destination and setup from the Viewer, choose File > Print Setup. The Printer Selection dialog box opens (Figure 236).

Figure 236
Printer Selection dialog box



The Printer Selection dialog box contains a scrollable list of printers accessible to your PC. Click **OK** to accept the selected printer and return to the Viewer window. Click **Cancel** to return to the Viewer window. Click **Help** to display online Help for this dialog box.

The Setup button opens the standard Windows printer setup dialog box for the currently selected printer. Refer to your Windows documentation for information on Print Setup.

Click **Cancel** in the Print Selection dialog box to return to the Viewer without changing the Print setup. Select a printer and click OK to set the selected printer as the Viewer default and return to the Viewer. This new printer destination is only valid for this viewer session. The report form still retains the original print setup.

Exit the Viewer

Select **File > Close** to close the Viewer and return to the Report Generation window.

Designing report forms

Overview

The OTM application includes several predesigned forms you can use to run the most common reports. OTM also includes a Report Generator module that includes a Forms editor. The editor lets you modify existing forms or create your own forms for customized reports.

The Forms editor lets you generate a customized layout for a report by piecing together predefined report sections.

Form concepts

The Report Generator organizes a report by sections. A report form can contain one or more sections:

- Report Header
- Page Header
- Sort n Header(s)
- Detail Section
- Page Footer
- Sort n Footer(s)
- Report Footer

Each of these sections is optional, but a form must contain at least one section and can have only one of each type. Each section allows an internal free layout of data. The only restriction is the position a section occupies on the report in relation to the other sections.

When you insert a new section in a form, it automatically positions itself correctly relative to other sections. This position is indicated in the Editor window by a line with the section title printed on it. This line is not part of the form, it merely serves as the top boundary of the section it indicates. The list above indicates the order in which the sections appear in the form.

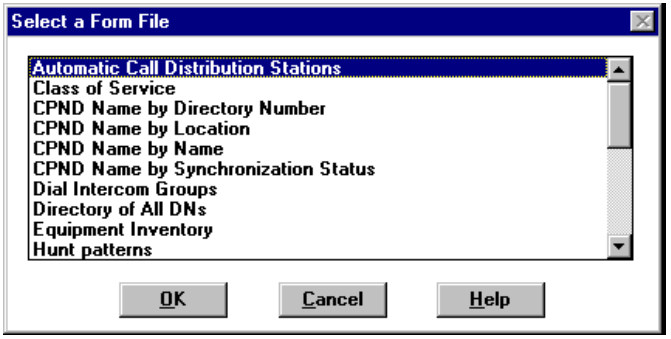
Arranging sections within a form is described in "Validating the data" on page 390.

Forms Editor

The Forms Editor is an application within the Report Generator that lets you design and customize a report using the current database.

Choose **Form > New Report Format** to display the Forms Editor, with a blank form in the working area. Choose **Form > Open Existing Report Format** to display a dialog box that lets you select from a list of forms for the current system database (Figure 237).

Figure 237
Select a Form File dialog box



The currently selected form is highlighted. Select a form from the list, and then click **OK** to open the Forms Editor. The Forms Editor contains a menu of actions to perform.

File menu

This menu contains commands for saving the current report file and specifying the report parameters.

Select Report View: Lets you select the key selection criteria that determine the content of the report at runtime.

Save: Store the current report form to a file. If it is a new form, you are prompted for a filename (up to eight characters followed by a period and an extension of up to three characters).

Save As...: Store the current report form to a file. Report form files must be stored in the common data directory. OTM does not allow changes to the path for these files.

Printer Setup: The Windows default printer is automatically assigned to the current form when you save it. This selection lets you select a different printer and printer configuration to be associated with the current form from a list of installed printers.

The printer options that you select here determine the width and height of the report. The width of the report is indicated by the length of the section separation lines in the form editor window.

Close: Close the Forms Editor and return to the Report Generation window. If the current form has not been saved since the last change, you are prompted to save it before exiting the editor.

Edit menu

This menu contains miscellaneous edit and cursor navigation functions:

Insert Line After/Before: Puts a blank line following/preceding the current cursor position.

Delete Line: Removes the current line, moving all successive lines up.

Highlight Off: Turns off any highlighting in the current form (lets you deselect text and fields).

Beginning/End of Line: Moves the cursor to the left/right end of the current line.

Next/Previous Word: Moves the cursor to the beginning of the next/previous word or field in the form, going to the next/previous line if necessary.

Section menu

This menu contains commands to insert, edit, and delete report sections.

New...: Lets you add a section to the current form. Sections include:

- Report Header: Appears at the top of the report only
- Page Header: Appears at the top of each page of the report
- Detail Section: Defines data to be reported
- Page Footer: Appears at the bottom of each page of the report
- Sort *n* Header: The *n*th sort criterion field for the report (*n* = 1–9)
- Report Footer: Appears at the end of the report only

The section title appears at the current position of the selected section on the form. This line indicates the Forms Editor cursor location. It does not appear on the printed form.

Edit Current...: Lets you define the layout of the section in which the Forms Editor cursor is currently positioned. It appears a dialog box containing check boxes for defining section layout at runtime. Choices include:

- Advance Page Before Printing the Section
- Advance Page After Printing the Section
- Supress Blank Lines
- Trim Spaces from Fields

- Prevent Section Break Across Pages
- Reprint Titles on Every Page.

Delete Current...: Removes the section in which the cursor is currently positioned; you are prompted to delete the section.

Sort Field...: Lets you change the current sort field selection. This selection is not available unless the form has sort fields defined (use the Section New function to insert sort fields).

Break Field...: In a typical report, the break field is the same as the sort field. This selection lets you define a field for a section break that is not a sort field.

Field menu

This menu contains options to insert, modify, delete, and maintain fields.

Insert New Field: appears a submenu that lets you choose a field type for insertion into the form at the cursor position. Field types include the following:

- **Data Field...**: appears a list of data fields in a record of the system database
- **Calculation Field...**: appears a box for entering a formula for the field
- **System Field...**: appears a list of OTM system fields

Edit Current Field...: Lets you modify attributes for the current field.

View Field Translation: Displays translation of fixed labels that display the “#” sign, as in the example of “#1234”. To view the translated text, place your cursor over the "#" sign. If translated text is present, the menu item **View Field Translation** is enabled and, after selecting the item, the translated text displays in a pop-up window.

Add View Field: Lets you add a field.

Edit Field Expression...: If you have a calculated field at the cursor position, this selection lets you modify the formula.

Options menu

This menu lets you define the appearance of the report and select data records for inclusion in the report.

Report Parameters...: Brings up a dialog box that allows you to specify certain report parameters:

- Name of the report (This is not the Windows filename.)
- Margins for the printed page
- Output of some trial records for form layout adjustment
- Default date format for input and during execution

Report Filter...: This option allows you to enter a filter criteria for the report. Each data record is tested with the expression that you provide here. A record is selected only if this expression evaluates to a TRUE value. For example, if the expression was *DN->amount>1000*, then only records with a DN higher than 1000 are included in the report.

Fonts menu

This menu contains formatting commands for highlighted characters (and field values) at runtime.

Normal: Removes character formatting, if any.

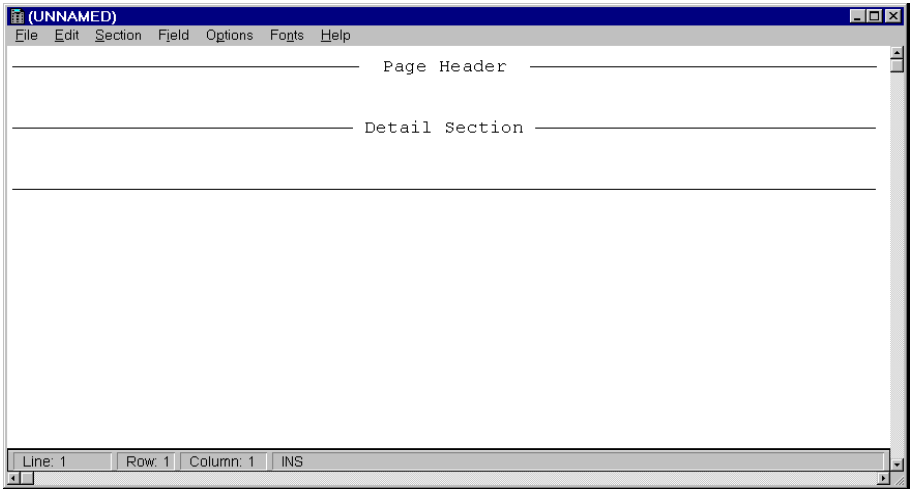
Formatting: Normal, **Bold,** Underline, *Italic*, Superscript, Subscript, ~~Strike~~.

Fonts...: Lets you select font and size for highlighted characters and fields.

Changing sections

Figure 238 shows an example of a blank form with all sections in place. The sections are divided by a line labeled with the section name. These lines are place indicators only and do not appear on the printed report.

Figure 238
Example blank report form



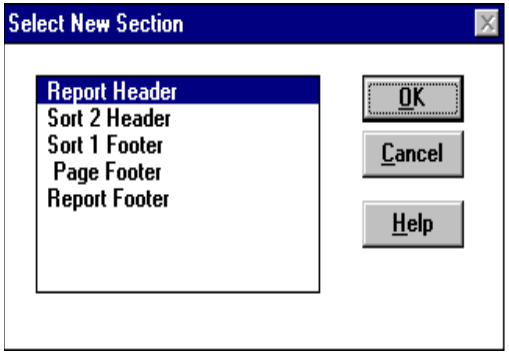
The **Section** menu lets you change the sections as described below.

Insert a section

To insert a section in a form, choose **Sections > New** with the cursor anywhere in the Forms Editor window.

The Select New Section dialog box opens listing the available sections. Only the sections that do not appear in the form are presented (Figure 239).

Figure 239
Select New Section dialog box



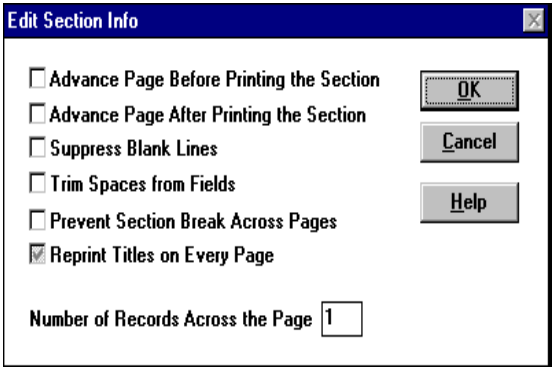
The currently selected Section is highlighted. Select a section, and then click **OK** to insert the section in the current form.

At insertion time, each section contains one blank line. Use the Edit > Insert Line After/ Before functions to change the section size at any time while the cursor is in the work area of the section (below the section title line and above the next section title line).

Define section parameters

You can set runtime parameters for the section at the current cursor position. Choose **Section > Edit Current** to display an Edit Section Info dialog box (Figure 240 on page 515). This dialog box contains check boxes that let you set or clear section parameters

Figure 240
Edit Section Info dialog box



Select the appropriate check box to toggle parameter selection. The parameters include the following:

- Advance Page Before Printing the Section: The section is printed at the top of the next page.
- Advance Page After Printing the Section: Causes a printer Form Feed after this section.
- Suppress Blank Lines: Causes blank lines not to be printed.
- Trim Extra Spaces from Fields: If a field value is shorter than the field maximum length, this selection causes the field length to be truncated to the length of the value.

- Prevent Section Break Across Pages.
- Reprint Title on Every Page

If you are using a columnar format, this parameter may cause misalignment of columns.

Report Header/Footer

These are printed only once, at the beginning/end of the report. The header is generally used as a title and description of the report. The footer may be used as a report summary. A report header and footer can contain free text and fields, such as System Date and Time.

Page Header/Footer

These are printed at the top/bottom of every page in the report (beneath the Report Header on the first page and above the report footer on the last page). The header may contain text such as Report title, column headers and any other pertinent text as well as fields, such as System Page Number, Date, and so on. The footer may be used for page numbers and page by page field totals or other pertinent data or text.

Sort Header/Footer

Each of these sections indicate a field that the report uses for a sort break. The field you choose is not printed. You can place text or fields or both text and fields at these section breaks to describe the sorts being used in the report.

Detail Header

This section contains a list of data for each record of the database, selected and sorted according to defined criteria.

Edit a form

Text and data are added at the current position of the cursor within the form. Move the cursor using the mouse or the keyboard arrow keys. The status line at the bottom of the window gives the cursor position by line (row) down and character (column) across. The <Ins> key toggles the insert/overtype mode. The status line indicates INS for insert mode (text moves everything to the right of the cursor to the right) or OT for overtype mode (text replaces existing text at the cursor position).

Type to insert text. There is no automatic line wrapping. If you insert a carriage return (<Enter>), the cursor is returned to the beginning of a new blank line.

You can use the Edit menu to move the cursor within a line, as follows:

- **Start of Line**: Left end of line
- **End of Line**: Right of the last character on the line
- **Next Word**: First letter of the word to the right of the cursor
- **Previous Word**: First letter of the word to the left of the cursor.

To insert and edit a field at the current cursor position, use the Field menu.

Insert a field

Choose **Field > Insert New Field** to display a submenu with a list of data field types to paste at the current cursor location. This option is not available when the cursor is positioned on a section separation line or on an existing field.

The selected field appears at the current cursor location as a series of "x" symbols that represent the maximum number of characters in the field, as defined in the database. You can delete any number of field symbols to reduce the field length. To increase the field length, position the cursor on any field symbol except the first one, and type spaces. You can change the current field attributes by choosing Field > Edit Current Field.

Insert a data field

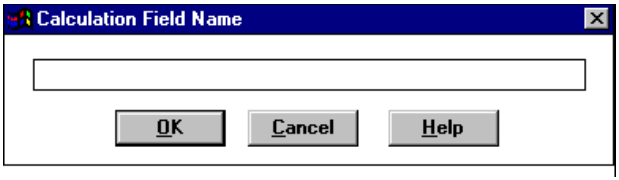
A data field is one field in each record of the current database. If you choose Field > Insert New Field > Data Field, a list of data fields is displayed in a Select Data Field dialog box. See "Selecting data items" on page 442 for further details.

Click **OK** to paste the selected field into the form at the current cursor position.

Insert a calculation field

A Calculation field contains an expression that is a combination of data, functions, and operators. At runtime, the expression result is output for each record. You must supply a name for the field as well as the expression to be evaluated. The Field > Insert New Field > Calculation Field option first prompts you for the name of the field in a Calculation Field Name dialog box (Figure 241).

Figure 241
Calculation Field Name dialog box



You can enter up to 48 alphanumeric characters (not blanks) in the text box to represent the calculated field name.

Click **OK** to enter an expression for the calculated field. The procedure for expression entry is the same as for "Define selection criteria" on page 443.

Insert a system field

A System field contains OTM system-dependent information, such as date, time, report page number, and record count. This information is typically in the report or page header or footer. One System field, WRAP_OVERFLOW allows a data field to overflow to the next line or lines. For example, a comment field of 30 characters can contain 10 characters in the data field itself and 10 in each of two WRAP_OVERFLOW fields (generally placed directly under the data field itself).

If you choose Field > Insert New Field > System Field, a list of System fields is displayed in a Select System Field dialog box. The procedure is the same as in "Select Data Field" on page 443.

Click **OK** to paste the current highlighted field in the form at the cursor position.

Edit field attributes

This option, available by choosing Field > Edit Current Field, is used to edit the attributes for the current field. This option is available only when the cursor is positioned on a field. The field name appears in the status bar of the form window. The option appears a set of attributes that can be modified for the current field. You can modify the field attributes as needed.

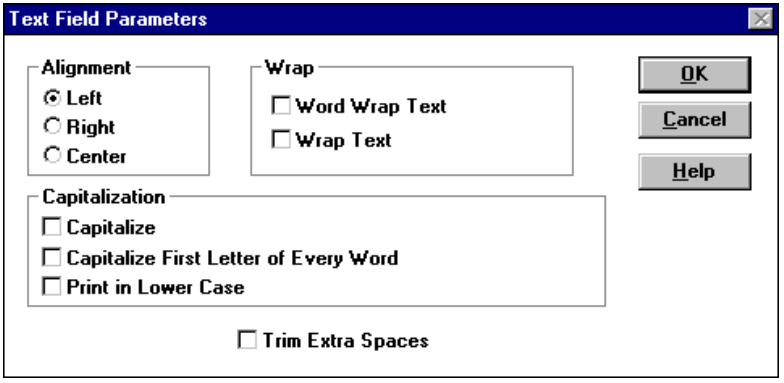
The attributes that you can modify depend on the type of field. Field types include:

- Text (alphanumeric characters)
- Numeric (numbers, including thousand separators and decimal point)
- Date (date in predefined formats)

Edit text field attributes

If the cursor is located within a text field and you choose Field > Edit Current Field, a Text Field Parameters dialog box displaying the current attributes for the field opens (Figure 242).

Figure 242
Text Field Parameters dialog box



The following parameters can be modified:

Field Alignment: By default, text data at runtime is left-aligned. You can use the radio buttons to select left, center, or right alignment.

Wrap: If the field length on the form is too short to accommodate the data at runtime, you can select a wrap option to run the text to a **WRAP_OVERFLOW** System field that

you have already defined. The Wrap option breaks at the end of the current field, and the Word Wrap option breaks at the end of the last word before the end of the field. The default attribute has no wrap option selected.

Capitalization: By default, all text in the data field is printed as stored in the database. You can change this to all capitals, leading capitals, or all lowercase, by selecting the appropriate check box.

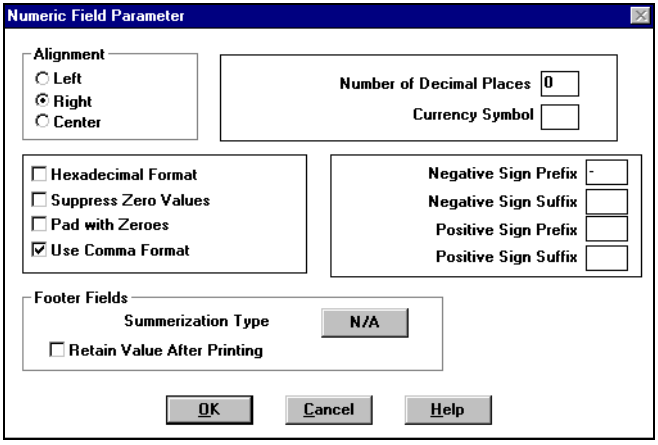
Trim Extra Spaces: This check box trims the field length to the length of the data that is entered at runtime.

If you are using columns, this option may cause columns to become misaligned.

Edit numeric field attributes

If the cursor is located within a numeric field and you choose Field > Edit Current Field, a Numeric Field Parameters dialog box displaying the current attributes for the field opens (Figure 243).

Figure 243
Numeric Field Parameter dialog box



The following attributes can be modified:

Field Alignment: By default, numbers are left-aligned at runtime. You can use the radio buttons to select left, center, or right alignment.

Number of Decimal Places: If the field contains a real number, this option lets you select the number of digits printed to the right of the decimal point.

Currency Symbol: If the field represents money, you can use this option to define the currency symbol.

Sign Representation: This option lets you select how to represent negative and positive number values. You can enter a character for prefix and suffix for both positive and negative numbers.

Zero Values: Select the Suppress Zero Values check-box to suppress printing this field if it contains a value of zero. Select the Pad with Zeroes check box if you wish to align the number to the right of the field and fill with leading zeroes. Select the Use Comma Format check box to insert a comma between thousand values in the field.

In addition to these attributes, you can edit the following attributes for fields that are located in the footer section of the report:

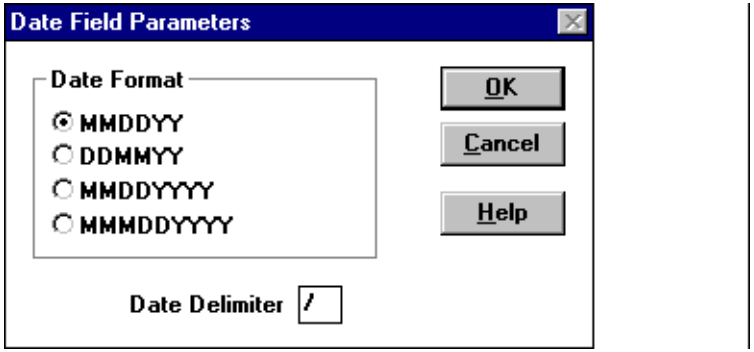
Summarization Type: A numeric field in the footer could require the report to print a summary value. This option is a function selector that appears a list of possible summary values, such as total, average, maximum, minimum, or count. You can also print the actual value for the field by selecting Value.

Retain Value After Printing: If the footer is a page footer, you can check this option to print "running" values instead of the value for each page.

Edit date field attributes

If the cursor is located within a Date field and you choose **Field > Edit Current Field**, a Field Name Edit dialog box displaying the current attributes for the field opens (Figure 244).

Figure 244
Date Field Edit dialog box



You have a choice of four formats for the Date output, selectable by radio button:

MMDDYY
DDMMYY
MMDDYYYY
MMMDDYYYY

You can also define the date delimiter by entering a required one-character delimiter in the Date Delimiter text box (/ or - , for example).

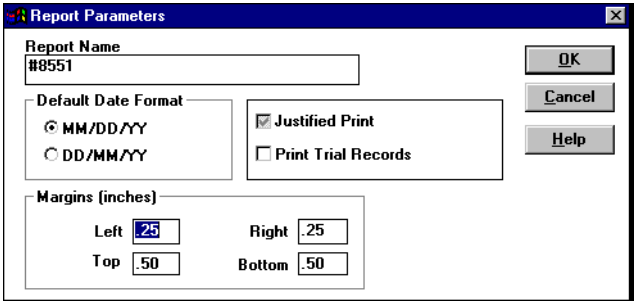
Edit calculation field expression

This option is available only when the cursor is positioned on a calculation field and you choose Field > Edit Field Expression, or when you are first inserting a calculation field in the form. The option shows the existing calculation expression, if any, in a dialog box and allows you to make modifications. The action of this dialog box is the same as that for "Define selection criteria" on page 443.

Setting report parameters

The Forms Editor Options menu lets you set parameters for the report. These parameters are stored with the form and will be operative at runtime.

Figure 245
Report Parameters dialog box



The parameters are defined in the Report Parameters dialog box (Figure 245).

To open the dialog box, select **Options > Report Parameters** in the Forms Editor. Parameters include the following:

Report Name: A text box that lets you enter up to 36 contiguous alphanumeric characters. This name is used in the OTM system as the name for the report and the form. This is not the same as the Windows filename.

Default Date Format: A pair of radio buttons that lets you define the format in which dates are printed at runtime. The two formats are MM/DD/YY or DD/MM/YY.

Print Trial Records: Run the report with just a few records. This enables you to check that the form generates a report with a suitable appearance and layout.

Margins: Four text boxes that let you set the page margins. Enter numeric data only, and ensure that the page layout is valid.

Character formatting

You can set the appearance of printed text using the Fonts menu. By default, text and fields are output in the Windows default font with Normal (unmodified) attributes.

A selection from this menu acts on the selected data. To highlight data (text and fields) place the cursor at one end of the data to be highlighted, hold down the left mouse-button and move the cursor to the other end of the data. To turn off highlighting, click anywhere in the form that is not highlighted.

Use the Fonts menu to display a list of character enhancements. Select one to print the highlighted text with that enhancement. Enhancements include the following:

Normal, **Bold,** Underline, *Italic*, Superscript, Subscript, ~~Strike~~.

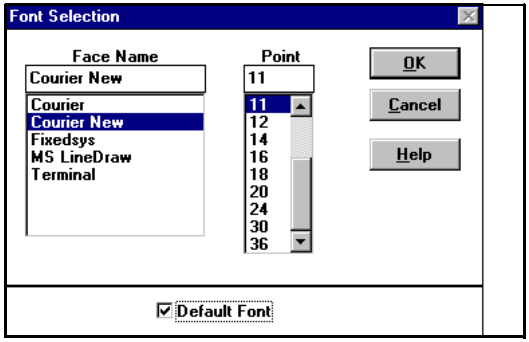
When you apply an enhancement, highlighting is removed. If you desire more that one enhancement for any text, you must highlight the text again and select another enhancement.

To remove an enhancement, highlight the text and choose **Font > Normal**.

Font selection

To open the Font Selection dialog box (Figure 246) , select **Fonts > Fonts...** . Choose a font for the highlighted text.

Figure 246
Font Selection dialog box



The Face Name box contains the name of the font for the selected text. A list box shows available fonts with the current font highlighted. Click the desired font to change the current font in the Face Name box. Use the arrows to help find the desired size, and click to select the font size.

Click **OK** to set the highlighted text to the currently selected font and size.

To use a single font for the entire report, select the font face and select the Default Font check box. This becomes the Normal enhancement selection.

Report criteria

The Forms Editor Options menu lets you select criteria for record selection in the report. The criteria cannot be set at runtime, and are stored with the form in which the selection is made. The criteria are defined in an expression that appears in a Select Record Criteria dialog box when you choose **Options > Filter**. The action of this dialog box is the same as for "Define selection criteria" on page 443.

Building a report in the OTM Report Generator - Form Editor

Reports in OTM are built using report forms. The report form contains the information that allows the same report to be run repeatedly with new or updated data. The report form stores information that fully describes the report to the OTM software. A report form is comprised of several sections that describe different aspects of the report. A number of standard report forms are provided with the OTM software to provide some commonly used reports.

Figure 247 shows a list of OTM Station reports with filter and field names:

Figure 247
Station reports

View	Database from which to extract values			CPND	CPND Name	Model	Ringing Numb	Station	Station DN
NAMECOMP	Concatenation of Lastname and Firstname								
TOTLSETS	Count the number of set types								
Report	**Description**	**View**	**Filter**	**Fields**					
ACD	Automatic Call Distribution Stations	Station	ACDS <> " "	ACDS	SPV	SPID	LOC	TN	LNAME
CLS-NCOS	Class of Service	Station		PRIMEDN	CLS	NCOS	LOC	TN	NAMECOMP
DIG	Dial Intercom Groups	Station	DIGS <> " "	DIGS	PRIMEDN	INST	LOC	DEPT	LNAME
DIR-DEPT	Telephone Directory by Department	Station		DEPT	NAMECOMP	PRIMEDN	TN	LOC	
DIR-DN	Telephone Directory by Directory Nu	Station		PRIMEDN	NAMECOMP	DEPT	TN	LOC	
DIR-LOC	Telephone Directory by Location	Station		LOC	NAMECOMP	DEPT	PRIMEDN	TN	
DIR-NAME	Telephone Directory by Name	Station		NAMECOMP	DEPT	PRIMEDN			
DIR-TN	Telephone Directory by Terminal Nur	Station		TN	PRIMEDN	LOC	INST	NAMECOMP	
DNB	Directory of All DNs	Station DN		ADN	INST	TN	LOC	NAMECOMP	
EQUIPINV	Equipment Inventory	Station		INST	TOTLSETS				
					Total of all sets				
HNTPTRN	Hunt Patterns	Station		NAMECOMP	PRIMEDN	HUNT			
KEYASGN	Key Assignments	Station Key	MNEMONIC<> ""	TN	PRIMEDN	LOC	NAMECOMP	INST	DDS
	(For each TN, list all keys)			KEYNUM	MNEMONIC	KEYPARM1	KEYPARM2		
MSG-CTR	Message Centers	Station Key	MNEMONIC = MWK	KEYPARM2	INST	LOC	DEPT	LNAME	
NAMEDN	CPND Name by Directory Number	CPND Name		PRIMEDN	LNAME	FNAME	LOC	CPND_TYPE	DISPLAY_FM
NAMELAST	CPND Name by Name	CPND Name		LNAME	FNAME	PRIMEDN	LOC	CPND_TYPE	DISPLAY_FM
NAMELOC	CPND Name by Location	CPND Name		LOC	LNAME	FNAME	PRIMEDN	CPND_TYPE	DISPLAY_FM
NAMESYNC	CPND Name by Synchronization Sta	CPND Name		SSTAT	LNAME	FNAME	PRIMEDN	LOC	CPND_TYPE
PHONEBK	Telephone Directory (Phone Book)	Station	.IF.WORD(STATION->LI	NAMECOMP	PRIMEDN	DEPT			
PRVT-LNE	Private Line	Station	PVLN <> " "	PVLN	NAMECOMP	DEPT	LOC	INST	
PWR-FAIL	List of Power Failure Phones	Station	POWERFAIL <> " "	LOC	POWERFAIL	PRIMEDN	NAMECOMP	DEPT	
RNPG	Ringing Number Pickup Group	Ringing Num	NUMBER>"0000"	NUMBER	MNEMONIC	PRIMEDN	INST	LOC	DEPT
SPD-CALL	Speed Call Groups	Station Key	MNEMONIC="SCC" or "	KEYPARM1	MNEMONIC	PRIMEDN	INST	LOC	NAMECOMP
SYS-SPD	System Speed Call Groups	SysSpd Call		NUMBER	MNEMONIC	PRIMEDN	INST	LOC	NAMECOMP
USED_DN	Used DNs	Station DN		ADN	NAMECOMP	LOC	TN		

This section describes a typical session to build a new report form. As an illustration, it produces a modified version of one of the OTM standard reports: Telephone Directory by Department. The report prints the department name once and prints the station information for each department underneath the department heading.This section also describes a step-by-step process to produce a report form. As you become more proficient using the Report Generator, you may find that you use a different series of steps to build or modify reports. Perform the following steps to build a report form:

Procedure 103
Building a report form

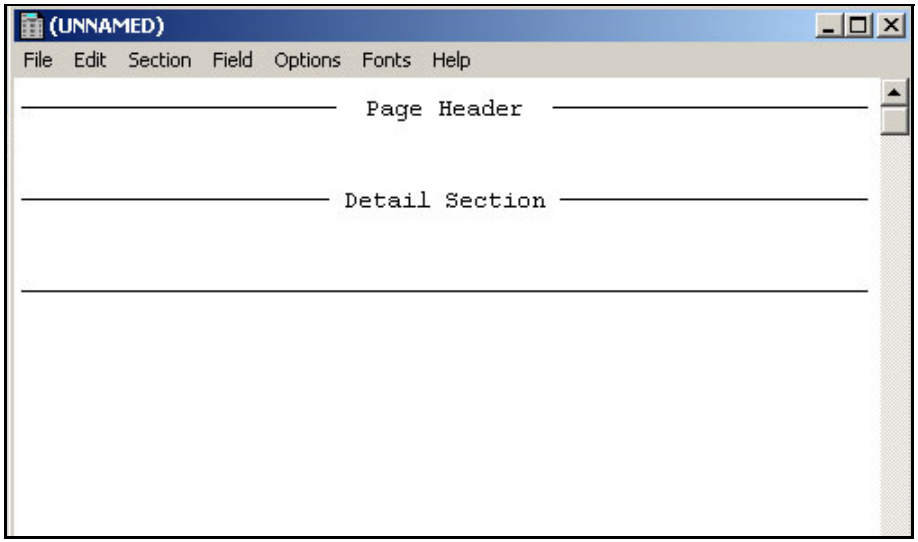
1. Decide what information needs to be displayed on the report.
2. Select the Report View that best provides the information.
3. Place the individual data fields on the report.
4. Decide if the report lines should be sorted.
5. Specify any special printer considerations for this report.
6. Apply the finishing touches.

7 Save the report and test the results.

End of Procedure

To work with Report Forms, start the Report Generator (select **File > Reports > Report Generator**). Select **Form > New Report Format**. This example shows how to create a new form. The report generator places an empty report form on the screen (Figure 248).

Figure 248
Empty Report Form



Decide what information needs to be displayed on the report

As you will see in the next section, information in OTM is organized into several logical databases. A report can use any one of these logical databases. There is also OTM system-dependent data that can appear on a report. This data includes date, system name, page number. Reports also can contain fixed text, typically headings or other constant text information.

In this example, you are using station information (as distinguished from CPND or VMB information). You can sketch out a rough picture of the report as a guide to what will fit on the page and how much heading information will be included.

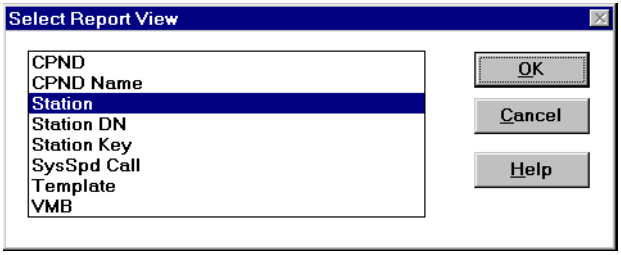
The basic model of the Report Generator is to read each record in the logical database, decide if it should be included in the report (according to the Report Filter). Some reports sort the records (according to the Sort Header sections). Finally, the records are

printed. Some reports print out a line for each record included in the report (specified in the Detail section). Some reports print out summary information (specified in the Sort Header or Sort Footer section), such as the total number of particular instrument types. Some reports combine the detail and summary information

Select the Report view that best provides the information

After deciding to build a report focusing on station data, pick an appropriate Report View (Figure 249). Views provide alternative ways of looking at the data. Some of the report views describes the type of data. If the report describes CPND configuration information, then choose the CPND view; for CPND Name information (by Directory Number or Group) use the CPND Name view; for VMB information (by Directory Number) use the VMB view.

Figure 249
Select Report View dialog box



Station data is provided with some alternative views. If the report should print one line for each station, then choose the Station view. If the report should print one line for each Assigned Directory Number, then choose the Station DN view. If the report should print one line for each station key, then use the Station Key view. (In the Station Key view, single line information is included by assigning “pseudo key numbers” to the single line key features.) The SysSpdCall view is a special view primarily designed for the System Speed Call Report. It provides one record for each system speed call list user. If the report is selecting only certain records from the database or printing only summary data, then it will not actually print a line for each record, but the view describes how the selecting and sorting process examines the records in the database.

Place the individual data fields on the report

Once the Report View has been chosen and the basic design of the report has been defined, it is time to place the data on the report page. The Report Generator Forms Editor shows the current form broken into its logical sections. Initially, the Page Header section and the Detail section appear. As other sections are incorporated into the form, they appear as well. In this example, the report contains the following sections:

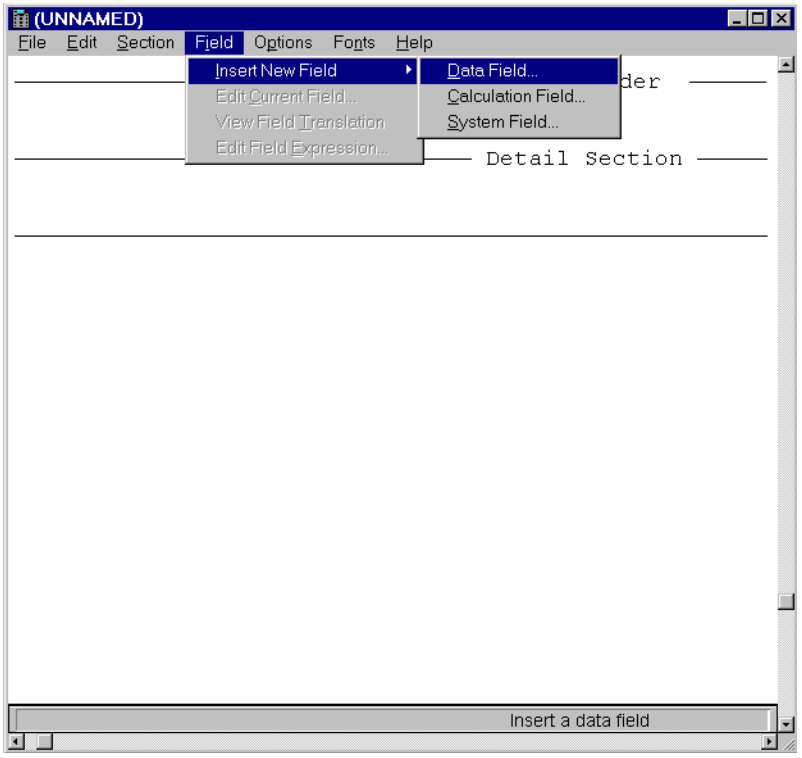
Page Header: This section contains the information displayed at the top of each page. Typically, it contains the report title, the column headings over the data, the page number, the system name.

Detail: The detail section describes the data items that appear on each line in the body of the report. Typically, it contains data from each record in the database that is included in the report. The data may be data items from the record or calculated fields built from the data fields. Calculations allow the report to create specially formatted names or other special expressions.

Sort Header: The sort header sections (there can be several) describe how the lines in the report are ordered. Sort 1 Header describes the primary sort, if two records have the same value for the sort field, then Sort 2 Header can be used to refine the order of the report. A report that should be ordered by name might specify LastName in Sort 1 Header and FirstName in Sort 2 Header.

It is often easier to design the report by specifying the Detail section first. This allows you to lay out the data on the page before placing the column headers. Treat the screen as a blank report page and position the cursor in the Detail section where the field should be placed. Select **Field > Insert New Field > Data Field** to see a list of available data items (Figure 250).

Figure 250
Inserting Data Field in the Details section



Select **Field > Insert New Field > Data Field** to display a list of the fields that apply to this report view (Figure 251). This Select Data Field list also appears in other situations where you need to select a field. Several data fields have been added specially to help produce reports and some fields have special meanings that affect their use in reports. Some examples of special reporting data fields include the following:

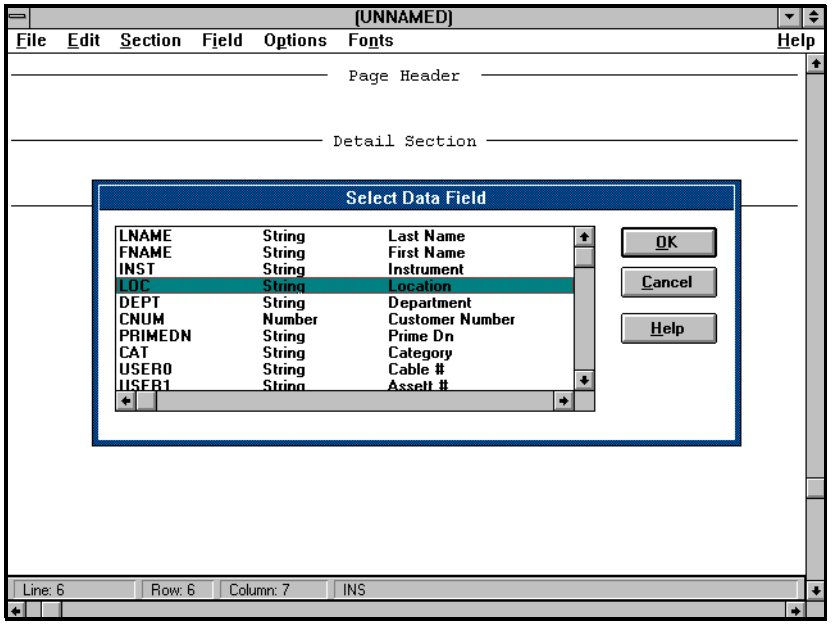
ADN - All Directory Numbers: A list of all the Directory Numbers assigned to the station. This field creates a text field with the DNs separated by a space.

ACDS: Keys Assigned to Automatic Call Distribution, showing both the ACD DN and Position ID.

DN: The Directory Number assigned to a single line station. The PRIMEDN field contains the Directory Number assigned to a single-line station and the Directory Number assigned to Key 0 on a multi-line station.

Key features should be reported from the Station Key view and not from KEYGUPD or FTRGUPD.

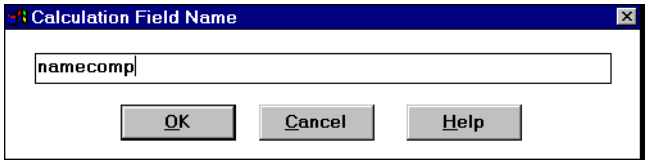
Figure 251
Select Data Field dialog box



Use a calculated data field to tailor the information from the data record.

To use a calculated field in a report, select **Field > Insert New Field > Calculation Field**. A dialog box opens (Figure 252), prompting you to name the newly calculated field.

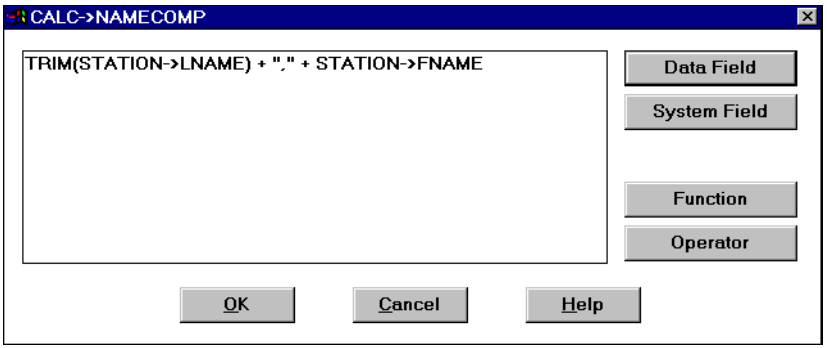
Figure 252
Calculation Field Name dialog box



The Field Name dialog box is followed by a dialog box that allows you to construct an expression that performs the calculation. It can be built from existing data fields,

functions, and operators. The example in Figure 251 constructs a field that contains "Last Name, First Name."

Figure 253
Defining a Calculation field

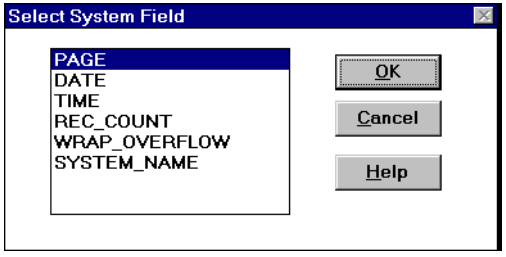


Note that the TRIM function is used to remove extra spaces and the "+" operator is used to concatenate the two fields. You can type the expression directly in the box or you can select the fields (from the Data Field or System Field buttons), the functions, and the operators. The expression is built as the pieces are selected.

Note that some functions apply to text fields and some functions apply to numeric fields. The Select Data Field list shows whether a field is numeric or text. In general, functions should not be applied to the System fields.

After the detail section has been specified, you can design the Page Header section. The text for the column labels can be placed over the appropriate data. The Page Header section often uses the System data fields: page number, system name, date, and time. Select **Field > Insert New Field > System Field** to open the Select System Field dialog box (Figure 254).

Figure 254
Select System Field dialog box

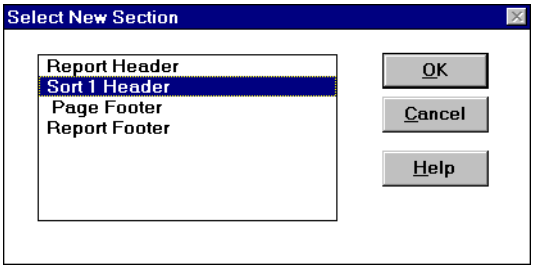


The Page, Date, Time, and System_Name fields are commonly used in the Page Header section. Other system fields are discussed in the section titled "Some special techniques" on page 538.

Decide if the report lines should be sorted

Many reports require the data to be sorted. Since there is no sort information on a new report form, select **Section > New Section**. The Select New Section dialog box opens (Figure 255). Select Sort 1 Header in the dialog box. This adds a sort section to the report.

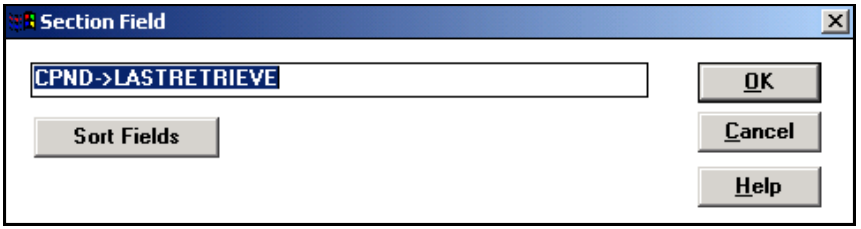
Figure 255
Select New Section dialog box



The first sort section specifies the data field that provides the primary ordering of the data. The data value to use for sorting will be selected from the list of data fields.

Other sort sections are applied only to provide secondary order levels within the primary ordering. To order a report by alphabetizing the names of people in a department, the report should use Department for Sort 1 Header, LastName for Sort 2 Header, and FirstName for Sort 3 Header.

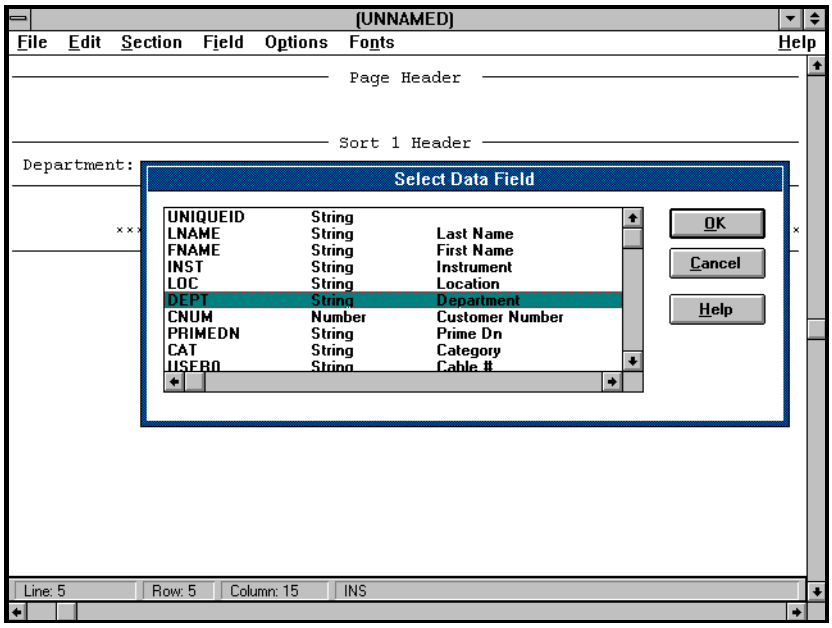
Figure 256
Sort Field dialog box



To modify a Sort Header after it has been specified, select **Section > Sort Field** . (It will only be available if the cursor is positioned in a Sort Header.) From this dialog box, click **Sort Fields** to display the list of data fields (Figure 256).

Summary information can be specified in the Sort Fields, as well. On a report sorted by department, it is possible to print each department name once, by specifying the Department field in the Sort Header section and not in the Detail section (Figure 257).

Figure 257
Adding summary information in the Sort Header section



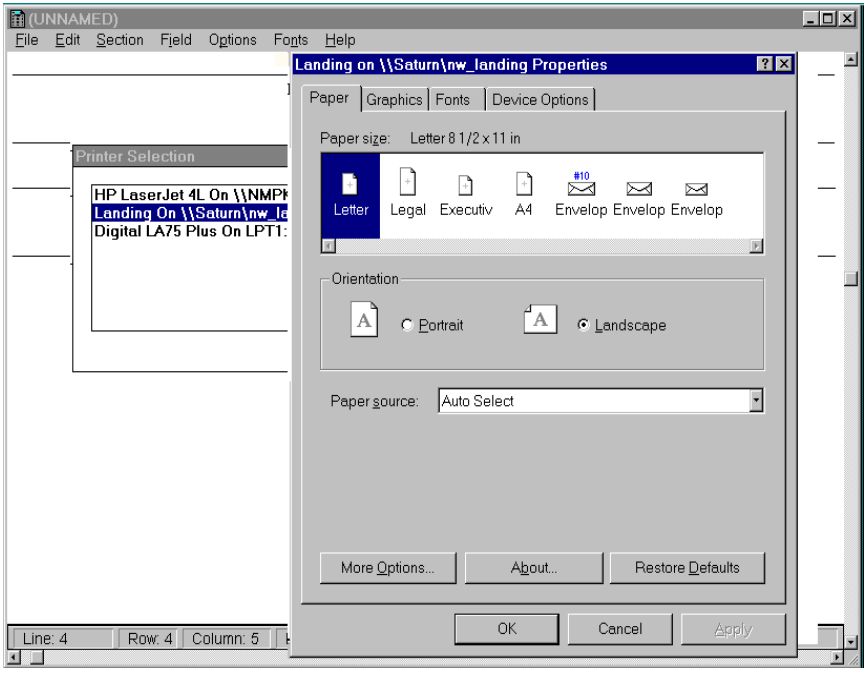
The Sort Header section prints only when the Sort Header's field value changes. It uses the data field on the first record in the new sort group. Typically, the data field chosen to print in the Sort Header should be the same field on which the data are being sorted.

Specify any special printer considerations for this report

The Report Generator allows each report form to contain special printer information. Some reports might be designed to print in landscape mode, while others should print in portrait mode. Some reports may require a special printer (an impact printer with special forms, for example).

To select a printer, select **File > Print Setup** and click **Properties** to specify special print instructions (Figure 258).

Figure 258
Printer Properties dialog box


(UNNAMED)
File Edit Section Field Options Fonts Help
Landing on \\Saturn\nw_landing Properties
Paper Graphics Fonts Device Options
Paper size: Letter 8 1/2 x 11 in
Letter Legal Executiv A4 #10 Envelop Envelop Envelop
Orientation
Portrait Landscape
Paper source: Auto Select
More Options... About... Restore Defaults
OK Cancel Apply
Printer Selection
HP LaserJet 4L On \\NMPI
Landing On \\Saturn\nw_la
Digital LA75 Plus On LPT1:
Line: 4 Row: 4 Column: 5

This information is stored with the form so that it applies each time the report is printed. When the Report Generator actually builds the report from the form and the data, you can override this printer information.

Apply the finishing touches

The Form Editor provides some additional capabilities to tailor the report. As you examine the almost complete report, you may want to modify the appearance of the report.

Lengthening and shortening data fields

You can adjust the width of the data fields in the report. The area for each data field is marked on the form with the small letter “x”. The data is printed in that marked area. If the actual data is longer, it will be truncated to fit in the area; if it is shorter, the rest of the marked area is filled with blanks. In the example report, you must lengthen the area set aside for the calculated field which holds the name. You may want to shorten a field to try to squeeze another field onto the report.

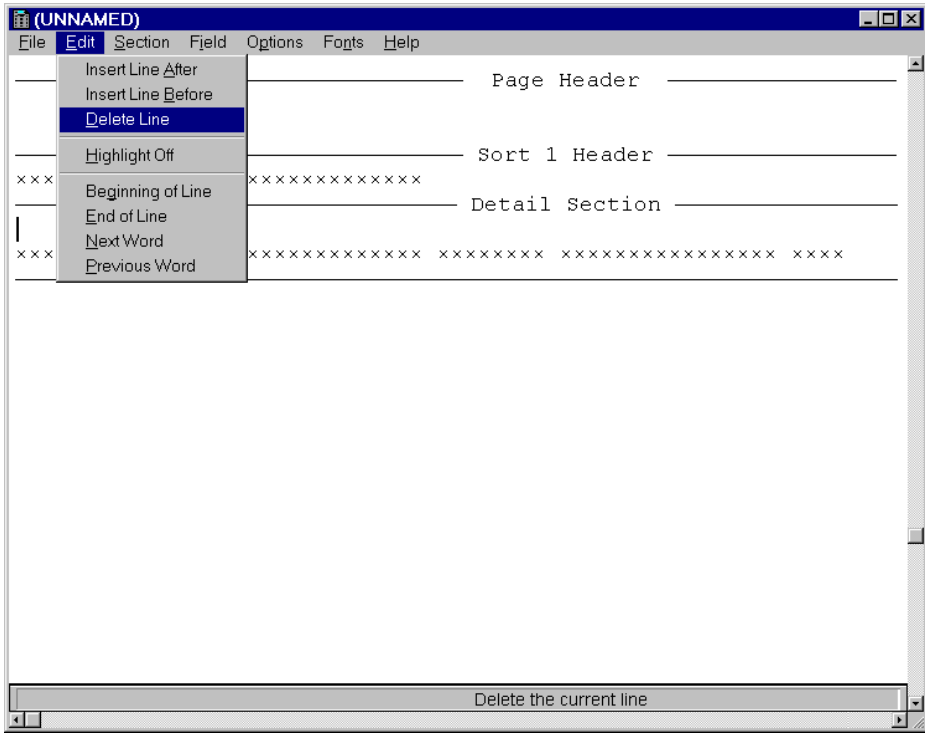
To adjust the width of a data field, place the cursor in the marked area. To shorten the field, press **<Delete>** or **<Backspace>**. To widen the field, press any other key. It appears on the form as the small letter “x”.

Adding and deleting blank lines

The Form Editor allows you to add and delete blank lines on the report. On a new form, the data in the Detail section is, by default, double-spaced.

To make a single-space report, position the cursor on the extra blank line and select **Edit > Delete Line** (Figure 259).

Figure 259
Deleting a blank line from the Detail section



Other items in the Edit menu allow you to insert blank lines either above or below the line on which the cursor currently rests.

Report Parameters

There are a few more options available to complete the report.

To specify the name of the report as it will appear in the list of available reports, select **Options > Report Parameters** It also allows you to specify margins and other report -wide options.

The Print Trial Records is used for reports that require that the paper be correctly aligned in the printer. It has no effect until you send the report to the printer. At that time, the Report Generator asks whether it should print a Trial Report. The Trial Report contains the Header and Footer sections and a single line from the Detail Section. Each data field is replaced with a string of the letter "X" of the appropriate length. You are asked to print the Trial Report until you click **No.** This allows you to adjust the paper in the printer until it is properly aligned. Then the full report can be printed.

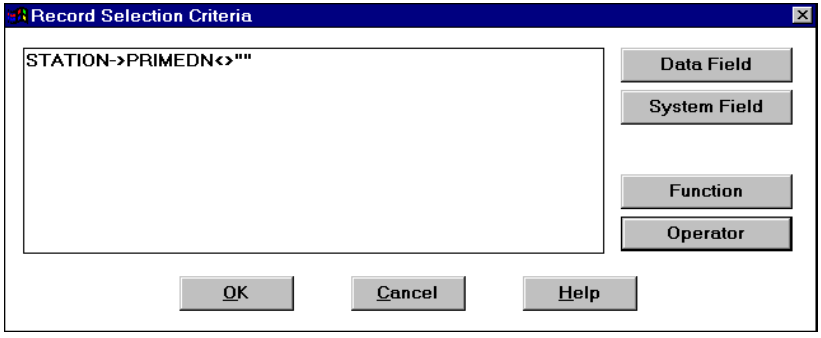
Report Filter

The Report Filter selects which records are to be included in the report.

To open the Record Selection Criteria dialog box (Figure 260), select **Options > Report Filter** .

This dialog box helps you to build an expression, typically from the data fields. As the Report Generator reads each record in the database, it evaluates the expression. When the expression is true, the record is included in the report.

Figure 260
Record Selection Criteria dialog box



The Record Selection Criteria dialog box operates very much like the Calculation Field dialog box. However, you should build an expression, usually including a comparison operator (=, >, <, <>). In the example, you are selecting all records for which there is a Prime DN. The expression tests whether the PrimeDN field is not equal (<>) to blank (" ").

Modifying fields

As part of the final tuning, you may want to specify more exactly how the fields are to be displayed. Select **Field > Edit Current Field**.

The Alignment options operate within the area of the data field, marked by the letter "x". The Wrap options should apply when the field will not fit in the area allowed. The section titled "Some special techniques"" (page 538) discusses how to wrap text. Similar display options, such as whether to use commas, control the printing of numeric fields.

Save the report and test the results

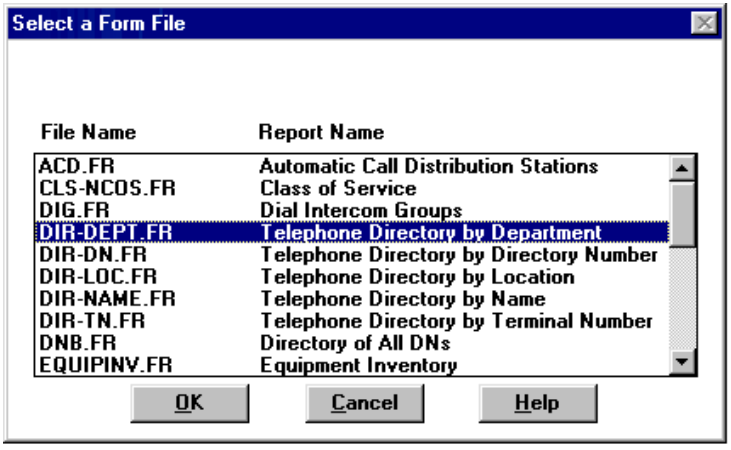
With the initial specification of the form complete, it is time to save the form and test it with the data from the system.

To save the form, select **File >Save or File > Save As**.

Select **File > Close** returns control to the Report Generator.

To test the form, choose **Report > Run Report** and select the report form you want to run (Figure 261).

Figure 261
Select a Form File dialog box



The Select a Form File dialog box uses the report names specified in the Form Editor's Option/Report Parameters dialog box. If you did not specify a name for a new form, this list appears the file name. If you modified an existing form and saved it with a new file name but did not change the Report Name, that Report Name appears twice. In this case,

you should go back into the Form Editor to give your modified report a new Report Name.

As you run the report, you may find that you want to modify the form.

To return to the Form Editor and modify the form, select **Form > Open Existing Report Format** from the Report Generator.

Some special techniques

The following are a few special techniques available in the Form Editor to help you customize your reports:

Sort Header section /Break Field

If the cursor is placed in a Sort Header section, the Section > Break Field menu item is enabled. The Break Field is a data field that causes the Sort Header section and the Sort Footer section to print. By default (and almost always) the Break Field is the same as the Sort Field that was specified when the Sort Header section was created.

Word wrap

If the data field does not fit in the area allowed for it on the form, you can specify that the field should wrap. By default, data which does not fit in the allotted space is truncated. Wrapping is especially useful for a field like ADN (the list of all Directory Numbers assigned to a station), which can be either quite long or quite short.

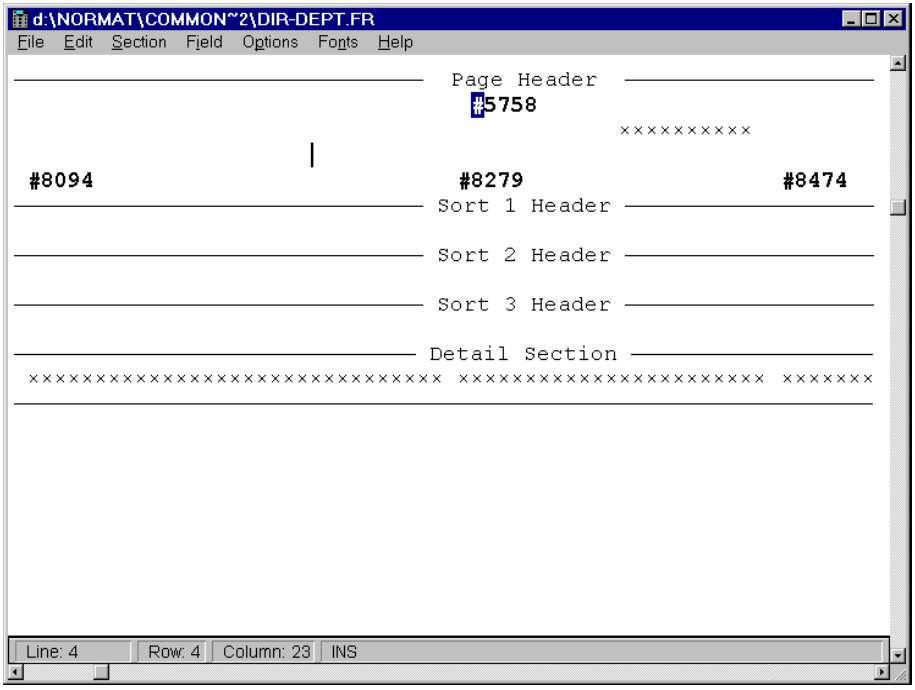
Wrapping the data field requires the following:

1. Mark the field as one that should be wrapped using the Field/Edit Current Field dialog box. (Wrapping only applies to text fields.) Choose the Wrap Text box to cause the field to wrap at a word.
2. Specify where to position the wrapped portion of the field. Position the cursor directly below the field that is to be wrapped and select **Field >Insert New Field > System Field**.
3. You can include several overflow areas directly below each other. If you wish to include the line for the overflow only if it is needed, select **Section > Edit Current Section**. This dialog box includes an option to Suppress Blank Lines that only prints the line with the Wrap_Overflow field if it is used.

Modifying a standard report

If you choose to modify one of the standard reports distributed with OTM, you will notice that there are numbers in the headers instead of text (Figure 262). These numbers allow the reports to translate automatically to another language.

Figure 262
Example Report



To see the actual text within the Form Editor, position the cursor on the octothorpe character (#) and select **Field > View Field Translation**. A box appears the text that appears on the printed report.

A quick description of some section types not used in the example

Sort Footer section: Data fields placed in the Sort Footer section can be used like summary data in the Sort Header section. The fields in the Sort Footer section are only printed if the value changes (except that it prints after the detail lines). In addition, Sort Footer data can contain totals and other summary statistics. After placing a data field in the Sort Footer, you are prompted with a list that contains Value (to print the value from the last record in the group) or various summary statistics (include Total, Average, Count, Max, Min). These summary statistics also can be specified by selecting Field > Edit Current Field in the Footer Field box.

Report Header, Report Footer: These sections can be used to specify data that should print only once at the beginning or the end of the report.

Templates

The standard OTM Station Administration window allows you to easily add or modify a few stations at a time. However, creating or maintaining large groups of stations quickly (as when establishing a new system) is better handled using Templates.

The Forms window minimizes the actions required to add a station, eliminates up-front configuration of line cards and numbering plan, and allows you to create specialized installation *forms* that include only the station fields that you decide you need to configure stations.

At any time while using the Forms window, you can press <F1> for online reference information on the current field.

Concepts of forms, templates, and filters

Forms and templates

A *form* (a file that you can design) acts as a *filter* to determine which fields (of the hundreds possible) are displayed in the Forms window for you to edit. When it's time to use the form, you fill in the station values as needed for the first station, save them, and move to the form for the next station in the group that you are adding. You create a form file (a list of only those station-definition fields you want to see in the order in which you want to see them) using the Forms Editor.

A *template* places default values in some of these fields to save you the repetitive task of adding the same value to station after station. You create a template file (a partially filled-in station) using the template view in the Station Administration module.

The function of templates is identical in the standard Graphical User Interface and the Forms Interface.

This means that a form, used in conjunction with a template, provides you with a station-definition window including only those fields that you want to edit, and with many fields already configured by the template with values of your choosing.

To lessen clutter on the screen, the fields configured by the template do not appear. This means that you work with only those fields that must be "personalized" for this station. You do not waste time moving through already configured fields.

You view and edit these station-configuration fields in the Forms Interface window.

Filters

There are hundreds of fields for a station. The Form File that you define acts as a filter to allow only the fields of interest to appear in the forms interface station definition window.

OTM automatically performs a second filtering to determine which of the station fields defined in the Form File actually apply to the current station. This *applicability* filter is based upon system data (software release, option packages, customer options), and the telephone type assigned to the current station.

There are two important benefits to this applicability filter, as follows:

- Form files are independent of systems, and, therefore, X11 software release, options packages, and customer options.

  For example, a form file may contain fields that apply to X11 Release 20, but not to Release 19. You can safely use this form with Release 19 systems, since the Release 20 fields do not appear.

- Form Files are independent of station types

  A single Form File can include both single line features (FTRs) and multi-line keys. If the form is used to display a single line station, then the FTRs (but not the keys) appear. If the same form is used to display a multi-line station, then the keys (but not the FTRs) appear.

Using Templates

You use the Forms interface to add one or many stations to a system, as described in this section. "Designing forms and templates using the forms editor" on page 558 describes the process of creating forms and templates.

Forms interface window buttons

The following buttons appear at the top of the Forms interface window:

- **OK**: (Single station adds only) Saves the current station and closes the window.
- **Cancel**: Cancels any changes to the current station and closes the window. Any stations created before the current station while using this form are still in place.
- **Validate**: Validates all current station values.

- **Details**: Opens new blank Employee Editor when "Create new employee" is selected in "Directory Options". It also opens new blank Roles and Projects Editor when "Create new role/project" is selected in "Directory Options".
- **Find**: appears the Entity Selector when "Assign to existing entity" is selected in "Directory Options".
- **Print**: Prints a short form for the current station. This printout shows all values in the station, not just those on the form. (This is a quick way for you to check the value of a field not on the form.)
- **Help**: Opens Windows Help.

Forms interface message bar

The message bar at the bottom of the window has two panels. The left panel provides a description of the current field. The right panel appears hint text for the current field (for example, the hot keys to invoke the DN and TN lists where appropriate).

Adding a single station or template

Keyboard shortcuts

In the procedures that follow, keyboard shortcuts are shown in brackets.

Procedure 104
Adding a single station or template

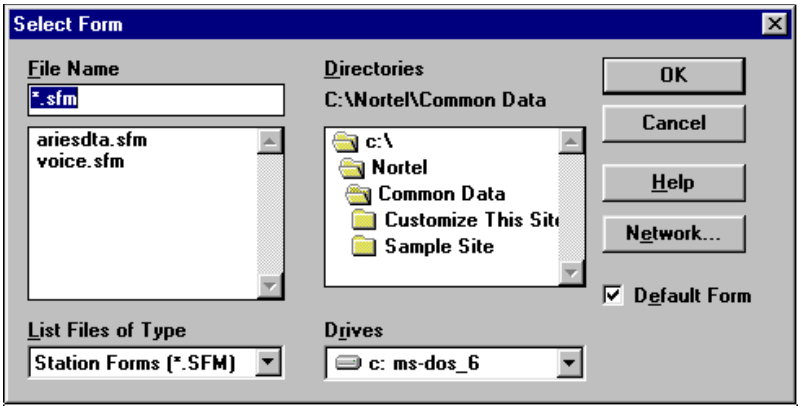
1 Choose **Forms > Forms Interface**.

This is a toggled menu item. Click it to place a check mark next to the name (selects it), and click it again to remove the check mark (deselects it).

2 Choose **Forms > Select Form**.

The Select Form dialog box opens (Figure 263). This is a standard Windows file open dialog box.

Figure 263
Select Form dialog box



3 OTM provides the following example forms for you to use in creating forms that meet your needs:

- ARIESDTA.SFM: Designed for M2xxx and M3xxx data stations.
- VOICE.SFM: Designed for all types of voice stations (single and multi-line).
- Default form: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

4 Select the form from the list box, or select the Default Form check box. Click **OK**.

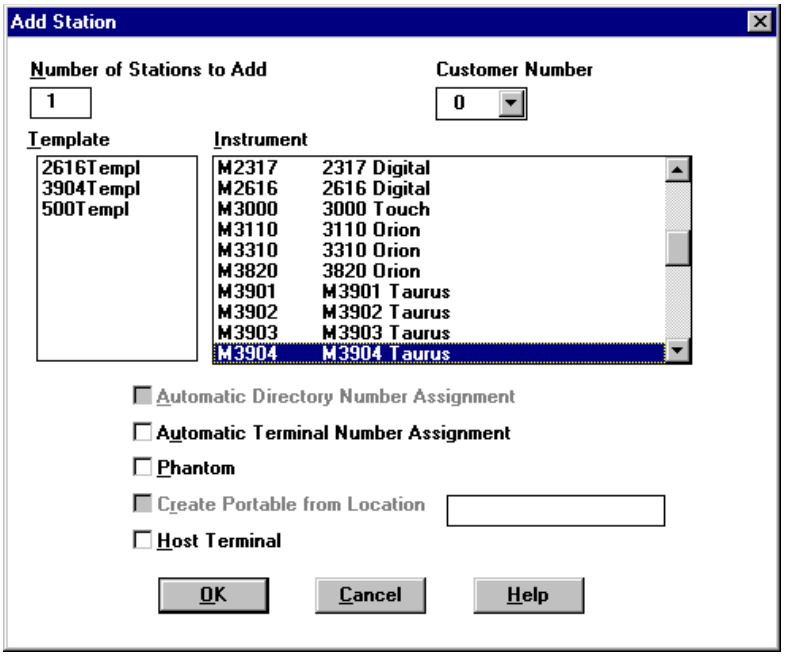
5 Choose **View > Station** to add a station or select Template to add a template.

The existing stations (or templates) for the system appear in the OTM Station Administration window.

6 Choose **Edit > Add**.

The Add Station dialog box (or Add Template dialog box) opens (Figure 264).

Figure 264
Add Station dialog box

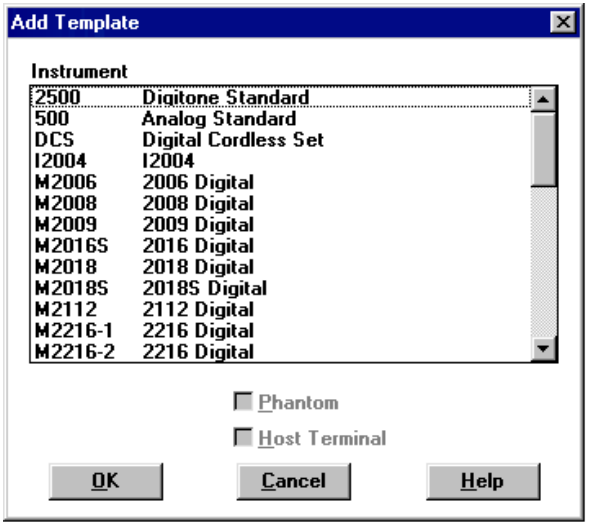


7 If you are adding stations, follow these steps:

- Enter “1” in the Number of Stations to Add field.
- Select the Customer Number in the pull-down box.
- Choose a template or instrument.
- If you choose a template, some fields are filled in with the default values that you chose when designing the template.
- Select the check boxes to automatically assign DN or TN, as desired.
- Select the Phantom check box to add a virtual station, or select the Host Terminal check box to add a host station for the Meridian 1 Virtual Office Feature available on M3900 Series telephones.

8 If you are adding a template, select a template from the list (Figure 265).

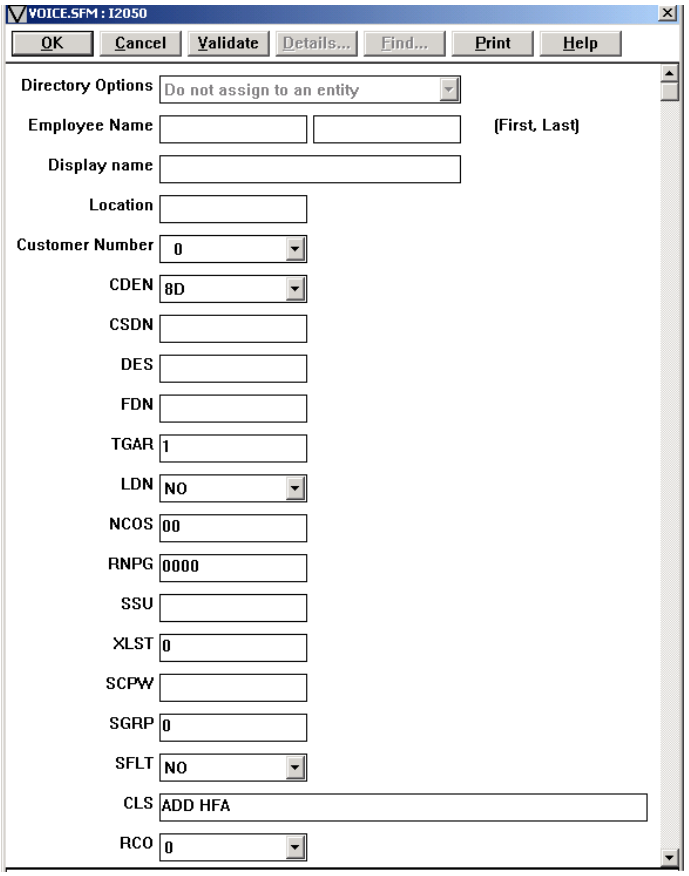
Figure 265
Add Template dialog box



9 Click **OK** to open the Forms Interface window.

The single station add form opens (Figure 266).

Figure 266
Single station add form



10 Fill in the fields as described in "Station fields" on page 551.

11 When you have entered all desired values, click **OK**.

This saves the station and closes the forms interface window.

12 For stations: If OTM is in Maintenance mode, the synchronization dialog box appears. Fill in the dialog box in the same way as with the standard interface. Click **OK**.

To invoke synchronization manually if you are in Installation mode, use the Synchronize menu.

End of Procedure

Updating a single station (or template)

Procedure 105
Updating a single station

1 Select **Forms > Forms Interface**.

This is a toggled menu item. Click it to place a check mark next to the name (selects it), and click it again to remove the check mark (clears it).

2 Select **View > Station**.

(To modify a template, select Template.)

The existing stations (or templates) for the system appear in the OTM Station Administration window.

3 In the OTM Station Administration window, double-click the station (or template) of interest.

The single station add form (or the template add form) opens.

4 Modify the fields as required.

5 Click **OK**.

6 For stations: If OTM is in Maintenance mode, the synchronization dialog box appears. Fill in the dialog box in the same way as with the standard interface. Click **OK**.

To invoke synchronization manually if you are in Installation mode, use the Sync menu.

End of Procedure

Adding multiple stations

Procedure 106
Adding multiple stations

1 Select **Forms > Forms Interface**.

This is a toggled menu item. Click it to place a check mark next to the name (selects it), and click it again to remove the check mark (clears it).

2 Select **Forms > Select Form**.

The Select Form dialog box appears. This is a standard Windows file open dialog box (Figure 275).

OTM provides the following predefined forms:

- ARIESDTA.SFM: Designed for M2xxx and M3xxx data stations
- VOICE.SFM: Designed for all types of voice stations (single and multi-line).
- Default form: A general-purpose form that includes all station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

OTM provides these predefined forms as starting points for your own special-purpose forms. You can create forms that include just the fields you need, and templates that set values that you define. See “Creating a new form” on page 558, and “Editing an existing form” on page 560.

3 Select the form from the list box or select the Default Form check box. Click **OK**.

4 Select **View > Station**.

The existing stations for the system appear in the OTM Station Administration window.

5 Select **Edit > Add**.

The Add Station dialog box opens.

6 Enter the number of stations that you want to add.

7 Select the Customer Number in the drop-down list.

8 Choose a template or instrument.

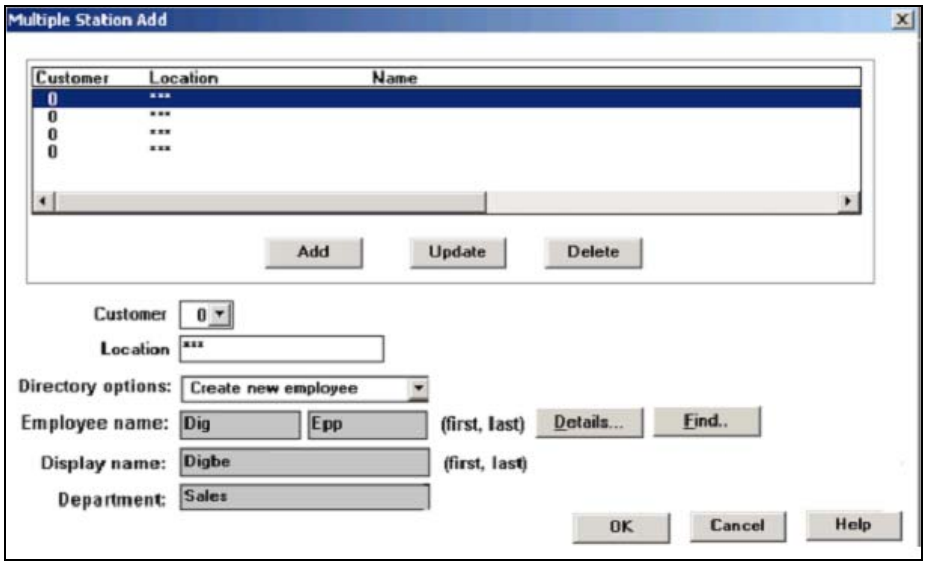
If you choose a template, some fields are filled in with the default values that you chose when designing the template.

9 Select the check boxes to automatically assign DN or TN, as desired.

10 Click **OK** to open the Forms Interface window.

The Multiple Station Add form opens (Figure 267 on page 549).

Figure 267
Multiple station add form (default form)



11 Fill in the fields as described in "Adding multiple stations" on page 356.

12 When you have entered all desired values, click Next.

This saves the station and opens the next blank station form. The Next button changes to a Finish button while you edit the last station in the group. The Finish button saves the station and closes the forms interface window.

13 If OTM is in Maintenance mode, the synchronization dialog box appears. Fill in the dialog box in the same way as with the standard interface. Click **OK**.

If you are in installation mode, use the Sync menu to invoke synchronization manually.

End of Procedure

Validating station data

You can validate by field or by station, same as the standard interface. In addition, you have the option to relax numbering plan and hardware validations to ease the process of adding multiple stations at one time.

Field validation

The current field is automatically validated when you move to another field. If the validation fails, an error message appears, and the focus returns to the erroneous field.

Station validation

In the Forms Interface window, click Validate to validate all values for the station. This performs the same operation as when you choose File > Validate.

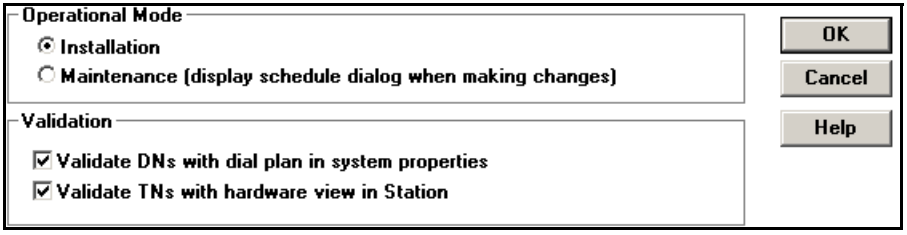
Validating the numbering plan and hardware

You can relax the numbering plan and hardware validation when you choose Options > Global Preferences and adjust the items in the Global Preferences dialog box (Figure 268) as follows:

- Turn off numbering plan validation. This allows you to assign a DN not defined in the numbering plan, without generating an error.
- Turn off hardware validation. This allows you to assign a TN for which there is no corresponding circuit card, without generating an error.

  Note: These validation settings affect both the forms interface and the standard interface.

Figure 268
Global Preferences



Station fields

This section provides detail on the station fields that you fill in using the Forms Interface.

Online Help

At any time while using the Forms window, you can press <F1> for online reference information on the current field.

Types of station field

The following basic types of station fields can appear in the Forms Interface:

- Class of Service
- Multi-line keys
- Single line features (FTRs)
- Prompts: These are all fields that do not fall into one of the above categories (for example, TN, NCOS, and TGAR).

Class of Service field

The Class of Service control appears as a CLS text box, which can contain multiple values (the approach taken by LD 10 and LD 11). Enter all CLS mnemonics for this station in the CLS text box.

You can enter multiple mnemonics for the same Class of Service in the CLS text box (for example, CFXA and CFXD). In this case, whichever mnemonic appears last (furthest to the right) takes precedence. This is consistent with the operation of LD 10 and LD 11.

The values of some Class of Service fields may not be visible on the form when it appears. Instead, the form shows only those classes of service that are not equal to default values. You can modify this partial configuration by adding new mnemonics or changing existing ones.

Press <Fl> while within any Class of Service field for a complete list of Class of Service mnemonics in Windows Help format.

Printing the Class of Service configuration

The Print button on the form window allows you to print a short form that shows the complete Class of Service configuration.

Multi-line keys

Keys for multi-line stations appear as drop-down listes containing all key mnemonics. As you move through the list of mnemonics, the key description appears in the message bar at the bottom of the window. Additional parameter controls appear automatically if a mnemonic requires them (and for FTRs set to Yes).

You can also type a mnemonic directly into the box. OTM tracks your typing and automatically enters the first matching key (and any associated parameter controls).

Alternately, type the first letter of the mnemonic, followed by the down arrow key. The selection moves to the mnemonic starting with that letter. Press the down arrow key again to scroll down the list starting at that point.

Single line FTRs

FTRs appear as drop-down listes containing the choices Yes and No. You can also type directly into the box. Additional parameter fields appear automatically if you set an FTR to Yes. When you move the cursor into a parameter field, the parameter description appears in the message bar at the bottom of the window.

Prompts

Prompt fields appear as either drop-down lists or as edit boxes, depending on the type of the field. Fields with a small number of predefined values appear as drop-down lists (for example, FCAR and DTR). Numeric fields and other fields with a wide range of possible values appear as edit boxes (for example, DES and FDN).

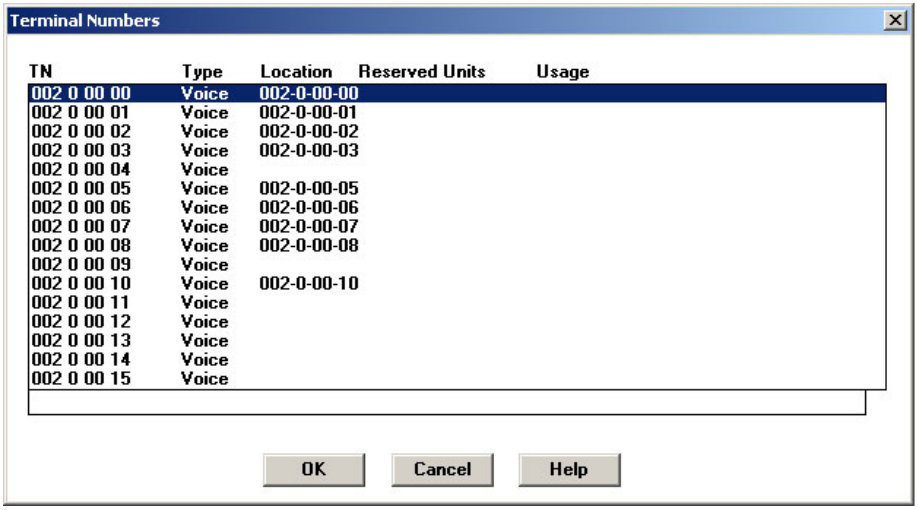
DN and TN fields

DN and TN fields allow you to use lists of values to fill in the fields. In addition, extra fields appear as needed to allow you to enter parameter values.

TN fields

When you edit a field with a TN type value, press <Ctrl> T (or double-click in the field) for a list of Terminal Numbers compatible with the current station type (Figure 269).

Figure 269
Terminal Numbers value list



DN fields

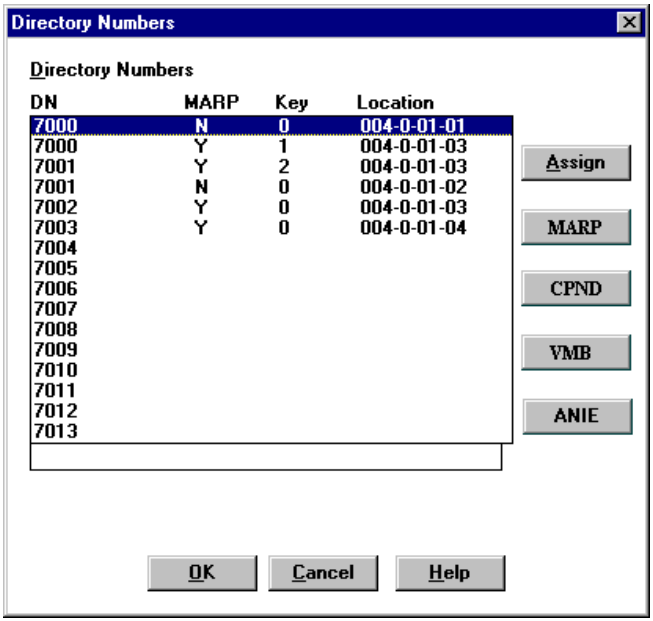
In addition to station fields, you need to modify fields that are not directly associated with the current station, but which are associated with DNs that appear on the station. You can use the following DN fields in the forms interface:

- MARP
- CPND
- VMB

DN data is applicable to stations only, not templates. Therefore, the MARP, CPND, and VMB controls described below appear only on a form when operating on stations. Templates do not actually have DNs. Even if a template is configured with a fully specified DN, no DN record will be added to the database until a station is created using the template. Therefore, at the time a template is created, there is no way to store any DN data.

Press <Ctrl> D while in a DN field (or double-click in the field) for a list of Directory Numbers (Figure 270). In the standard interface, MARP, CPND, and VMB appear as buttons on the DN list dialog box. In the forms interface, MARP, CPND, and VMB appear as fields on the main form.

Figure 270
Directory Numbers value list



MARP

The MARP drop-down list appears below the DN field with which it is associated. Multiple appearance DNs can have values of Yes or No. Single appearance DNs can have a value of Yes. The MARP field appears below the DN field of a single-line station and below the following multi-line keys:

- MCN
- MCR
- PVN
- PVR
- SCN
- SCR
- HOT_L_2WAY
- HOT_D_2WAY

CPND

The CPND name field is a single drop-down list (additional fields appear to the right if you choose a CPND value that requires them) (Figure 271). A CPND field appears below the DN field of a single line station, as well as below the following multi-line keys:

- MCN
- MCR
- SCN
- SCR

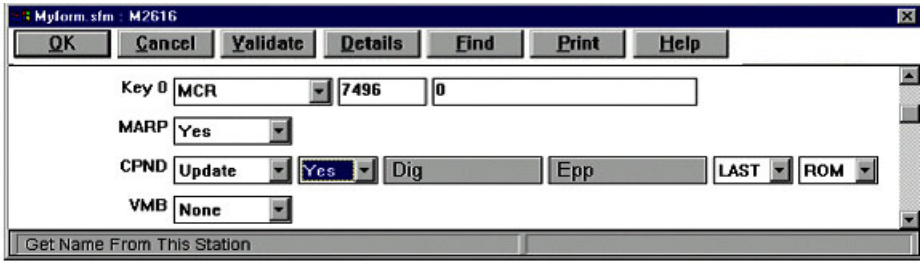
You can choose one of the following values from the drop-down list:

- **None**: Performs no CPND operation
- **Add**: Creates a new CPND name (appears only if no name exists yet for the DN)
- **Delete**: Removes an existing CPND name
- **Update**: Modifies an existing CPND name

CPND parameter fields

As you move the cursor into a parameter field, the parameter description appears in the message bar at the bottom of the window (Figure 271).

Figure 271
CPND parameter fields



The following parameter fields appear to the right of the CPND field when you choose a value other than None:

- **Get from location**: Drop-down list containing Yes and No

- **First name**: Text box
- **Last name**: Text box
- **Expected length**: Text box. This field is only added if the name has Sync Status NEW, and static allocation is enabled in the CPND Administration module.
- **Format**: Drop-down list containing FIRS and LAST
- **Language**: Drop-down list containing ROM and KAT. This field appears only if package 211 (Multi-language CPND) is enabled for the system.

Some additional attributes of the name controls follow:

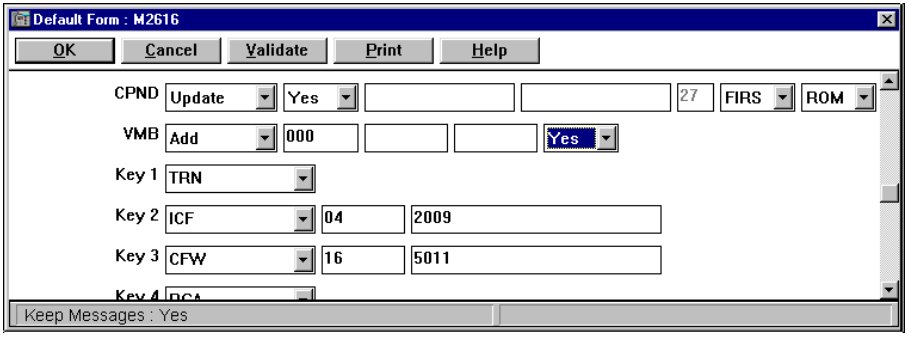
- If the Get From Location field is Yes, then the First Name and Last Name controls are dimmed and disabled, and contain the name from the First Name and Last Name fields of the station.
- If the operation is Delete, then the additional name controls are dimmed and disabled. This allows you to view the name which is to be deleted, but not to modify it.

CPND depends on package 95 (Call Party Name Display). If package 95 is not enabled for a system, the CPND field does not appear on the form.

VMB

VMB appears initially as a drop-down list (additional fields appear as needed) (Figure 272).

Figure 272
VMB fields



A VMB appears below the DN field of a single line station, and below the following multi-line keys:

- MCN

- MCR
- SCN
- SCR

The drop-down list contains the VMB operation to be performed, and allows the following values:

- **None**: Perform no VMB operation.
- **Add**: Create a new VMB (appears only if no VMB exists yet for the DN).
- **Delete**: Remove an existing VMB (appears only if a VMB does exist).
- **Update**: Modify an existing VMB (appears only if a VMB does exist).

If you select an operation other than None, then additional fields appear to the right of the VMB field. The additional fields are listed below in the order in which they will appear from left to right:

- Class of Service (text edit field)
- Second DN (text edit field)
- Third DN (text edit field)
- Keep messages (drop-down list containing No and Yes). This control is only added if the voice mailbox has Sync Status NEW.

As you select a VMB field, the description appears in the message bar at the bottom of the window. Additional parameter fields appear automatically if a VMB requires them.

If the VMB operation is Delete, then the additional fields are dimmed. This allows you to view the VMB that is to be deleted, but not to modify it.

VMB requires package 246 (Voice Mailbox Administration). If this package is not enabled, then the VMB fields do not appear on the form.

VMB is not applicable to CS 1000 systems.

Designing forms and templates using the forms editor

The OTM application assumes that station Form Files are located in the Common Data subdirectory, using a ".SFM" file extension. You can, however, place these form files anywhere you want.

OTM provides the following predefined forms:

- **ARIESDTA.SFM**: Designed for M2xxx and M3xxx data stations.
- **VOICE.SFM**: Designed for all types of voice stations (single and multi-line).
- **Default form**: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. Instead of selecting this form in the file-selection box, you select this form by selecting the Default Form check box.

Creating a new form

Procedure 107
Creating a new form

1 Select **Forms > Forms Interface**.

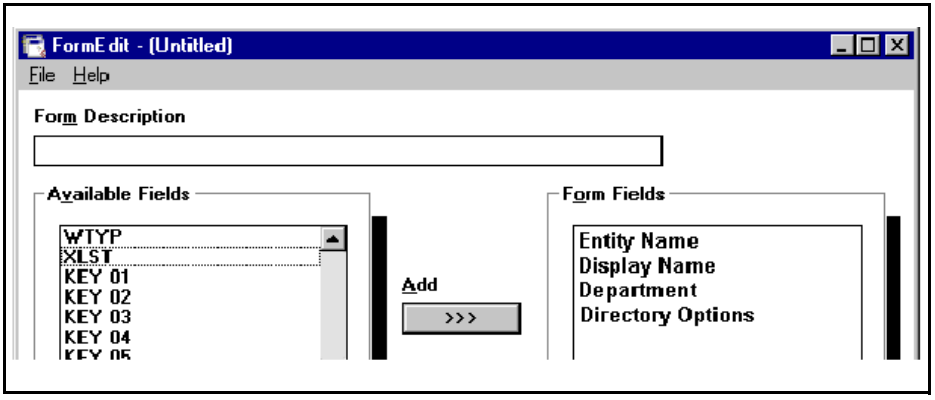
2 Select **Forms > Edit Custom Form**.

The FormEdit window appears.

3 Select **File > New** to open a new form.

The FormEdit window appears with no fields in the Form Fields list.

Figure 273
FormEdit window for a new form



4 From the Available Fields list, select the first field you want to include in the form, and click **Add**.

The field moves to the Form Fields list.

Alternately, you can select one or several fields to drag from the Available Fields list to the Form Fields list.

5 Move all the desired fields to the Form Fields list.

To change the order of the fields, click and drag items up or down in the list.

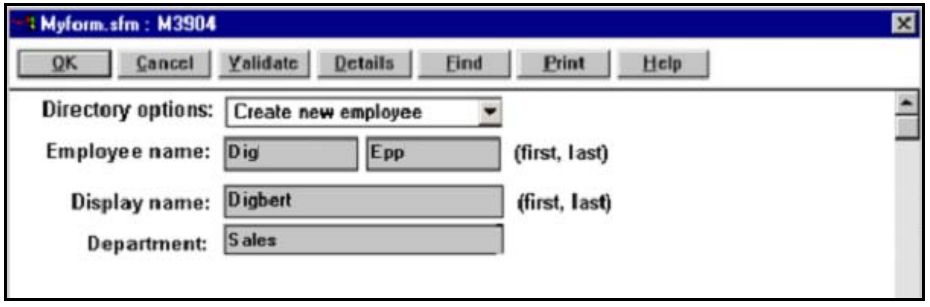
To remove an item from the list, click and drag from the Form Fields list to the Available Fields list, or select the item and click **Remove**.

Select an option from the Directory Options dropdown box.

6 When the Form Fields includes all the desired fields in the correct order, type a descriptive phrase in the Form Description text box.

This is a phrase to help you remember the form's usage, not the filename.

Figure 274
Myform dialog box



7 Select **File > Save** to save the form file.

The Save As dialog box opens, allowing you to name the new form. Enter a filename and click **OK**.

Alternately, to exit the forms editor without saving the form, choose File > Close. A warning box asks whether you wish to save the changes before exiting the editor.

Editing an existing form

Procedure 108
Editing an existing form

1 Select **Forms > Forms** Interface.

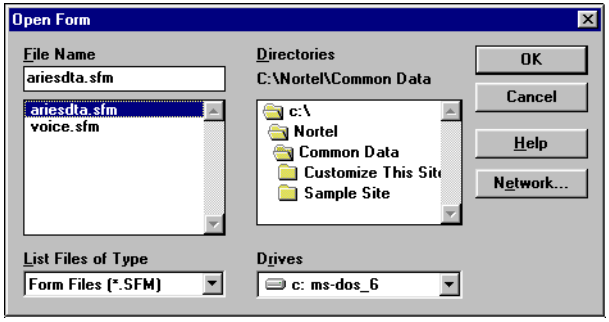
2 Select **Forms > Edit Custom Form**.

The FormEdit dialog box appears.

3 Select **File > Open** to install a form.

The Open Form dialog box opens (Figure 275).

Figure 275
Open Form dialog box



OTM provides the following predefined forms:

- **ARIESDTA.SFM**: Designed for M2xxx and M3xxx data stations.
- **VOICE.SFM**: Designed for all types of voice stations (single and multi-line).

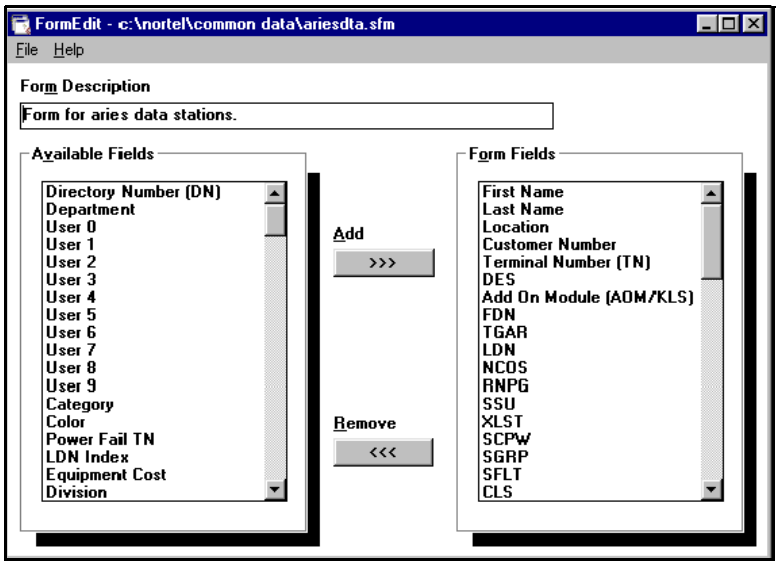
Default form: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

The sample forms provided with OTM are a good starting point for customized forms that you may want to create. Be sure to rename the forms when you save them. Subsequent versions of OTM will use the default filenames, so any files you create that use the default file names are overwritten during the next reinstallation or upgrade.

4 Select the form from the list box. Click OK.

The FormEdit window opens (Figure 276).

Figure 276
FormEdit window (M2xxx and M3xxx data stations)



5 From the Available Fields list, select the field you want to include in the form, and click Add.

The field moves to the Form Fields list.

Alternately, you can select one or several fields to click and drag to move from the Available Fields list to the Form Fields list.

Select an option from the Directory Options dropdown box.

6 Move all the desired fields to the Form Fields list.

To change the order of the fields, click and drag the item up or down in the list.

To remove an item from the list, click and drag from the Form Fields list to the Available Fields list, or select the item and click Remove.

7 When the Form Fields includes all the desired fields in the correct order, type a descriptive phrase in the Form Description text box.

This is a phrase to help you remember the form's usage, not the filename.

8 Select **File > Save As** to save the modified form file. Alternately, to exit the forms editor without saving the form, select **File > Close**. A warning box prompts whether you want to save the changes before exiting the editor.

End of Procedure

Alarm management

Alarm management configurations

OTM is the collection point for alarms from Meridian 1 and Communication Server 1000 workgroup devices. It provides an integrated system view of these alarms. It also provides a gateway to monitor, access, and correct faults for those devices.

You can configure OTM alarm management to meet the needs of different users. Typically, there are three levels of administrative responsibilities:

- A single system
- Multiple systems in one or more sites
- A large network of voice and data products

For Alarm Management to function, the user must disable the SNMP Trap Service. Follow the steps in Procedure 109 to disable the SNMP Trap Service.

Procedure 109
Disable SNMP Trap Service

1. Choose **File -> Exit**.
2. From the Start menu, click **Settings -> Control Panel -> Administrative Tools -> Services**.
3. Right-click the **SNMPTrapService** and choose **Properties**.
4. In the **Startup type** drop-down list, select **Disabled**.
5. Reboot the OTM PC.

End of Procedure

The following sections provide an overview of how OTM alarm management can meet the needs of these different users.

System and device level management

You can configure the system to send SNMP traps to the OTM Server (X11 Release 22 and later for the Meridian 1). You can also configure the system to filter the traps being sent (for example, only send critical alarms to OTM). The user responsible for the system can use the OTM Windows Alarm Browser to see all the system events and alarms.

You can configure other Meridian products to send traps to OTM. OTM can recognize these traps and provide help for individual alarms. Refer to the respective product documentation for current software release and configuration procedures for the following Meridian products:

- IP Telephony Gateway (ITG)
- CallPilot
- Symposium Call Center Server (SCCS)
- Meridian Mail 13

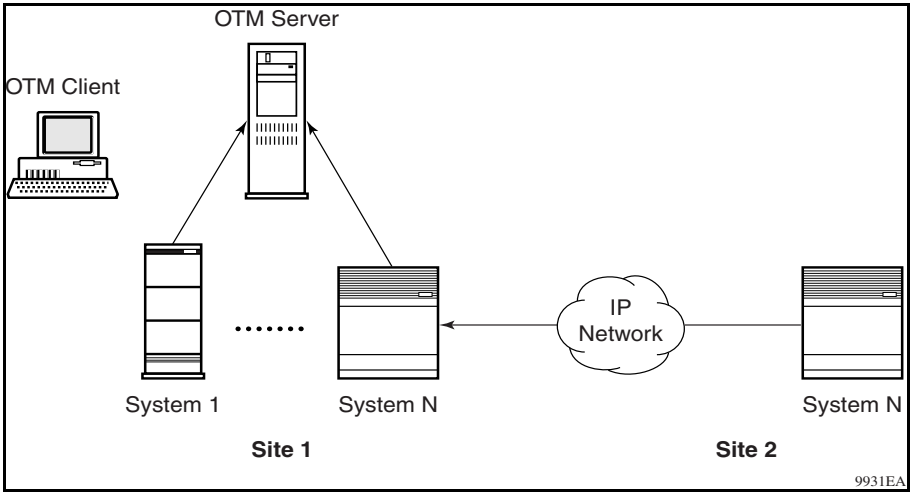
The user responsible for these devices can use the OTM Web Alarm Browser to display alarms from a single device.

Site level management

OTM collects alarms from multiple devices in one or more sites. You can use the Web Alarm Browser to view all of these alarms.

Use the Alarm Notification application when critical alarms occur to identify the notices that are sent and to whom they are sent. Figure 277 shows devices transmitting alarms to the OTM Server.

Figure 277
Site alarms



Network level management

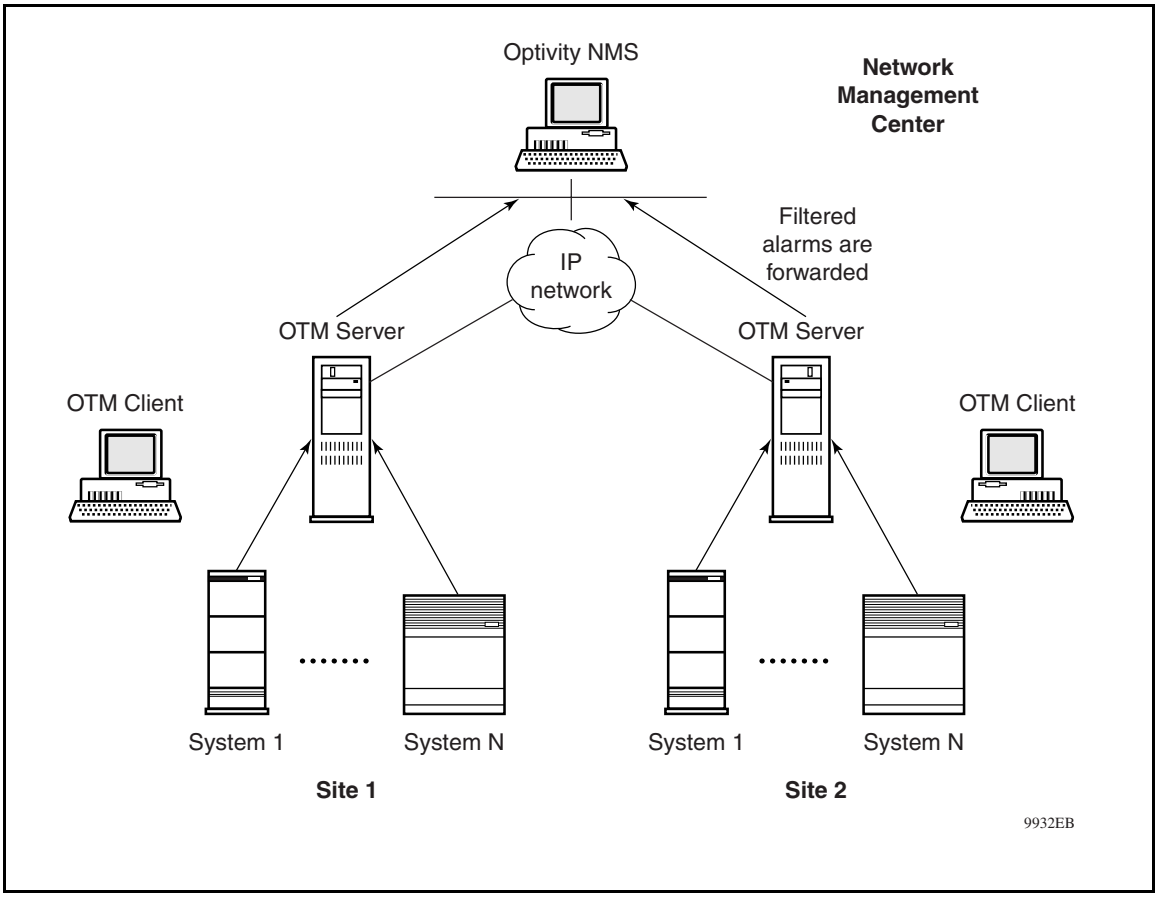
The devices represented in Optivity NMS are OTM Servers that manage individual voice elements. The OTM Servers are manually added to the Optivity NMS network by the administrator.

The OTM Alarm Notification application reformats, filters, and forwards traps to Optivity NMS. Because OTM forms the main representative agent for Meridian 1 systems, Communication Server 1000 systems, and related voice devices, all alarms received by Optivity NMS result in the change of status state of OTM depicted in the Optivity NMS InfoCenter. The traps are reformatted into the open alarm II format. Typically, only critical alarms are forwarded to Optivity NMS.

When Optivity and OTM coreside on the same server, the OTM trap system disables its Trap Server and instead sends traps to the Optivity Trap Server.

Figure 278 shows alarms being forwarded from OTM Servers to Optivity NMS.

Figure 278
Network alarms



Optivity NMS InfoCenter

Optivity NMS InfoCenter graphically displays inter-networking device fault status in color. Other Optivity NMS applications are available to help you identify the source of the fault.

You can configure the Optivity Telephony Manager as an object in InfoCenter, representing the systems that it manages. OTM-connected systems forward faults to InfoCenter. The fault color represents the fault status of the device.

The applications that you can open for a device depend on the settings in the Application Launch application. For more information on using Application Launch, see the Optivity NMS Application Launch online Help system.

To resolve faults on switches managed by an OTM server, launch the OTM application. This starts a web browser session with the OTM server. You can then access the web applications available on the server through the OTM Web Navigator.

The Path Trace feature discovers and displays the connections between resources in the network, including physical and logical paths, and also graphically identifies faults.

The Fault Summary feature displays the faults (or traps) for a single device, multiple devices, or the entire network. Based on the information provided, you can use other Optivity NMS applications to take corrective actions.

Alarm management

Alarm management consists of a number of components that improve handling of system-generated alarms and events. On Meridian 1 systems, alarm management is only available for systems running X11 Release 23 or later that are configured with the alarm management package (296).

The Meridian 1 and Communication Server 1000 alarm management components are:

- Text Handler
- Alarm Banner dialog box
- Events Monitor window

Text Handler

For older Meridian 1 systems, you can use the Text Handler to parse maintenance TTY output and generate traps on error messages. The Text Handler is intended primarily for Meridian 1 systems running X11 Release 21 and earlier and for Meridian Mail systems

that cannot generate traps. You can also use the Text Handler to create rules to support serial devices. The Text Handler is a part of the Database Buffering and Access (DBA) application. Refer to "Data Buffering and Access (DBA)" on page 243 for details.

Alarm Banner dialog box

You can determine system status by reviewing the history file to look for problems, and by issuing a number of status commands in various overlays to look for disabled or faulty hardware. The Alarm Banner dialog box automatically alerts you to this information in a simple, direct manner.

The Alarm Banner dialog box alerts you to new critical alarms and gives you the count of all new alarms. To learn more about an alarm, you can open the Events Monitor window. If there are no alarms, you can log out or leave the Alarm Banner displayed and go on to another task.

When a new critical alarm arrives, the system beeps if the notification option has been set, and the Alarm Banner title bar icon and Events Monitor window task bar icon flash. The flashing continues until you click anywhere in the Alarm Banner dialog box or Events Monitor window.

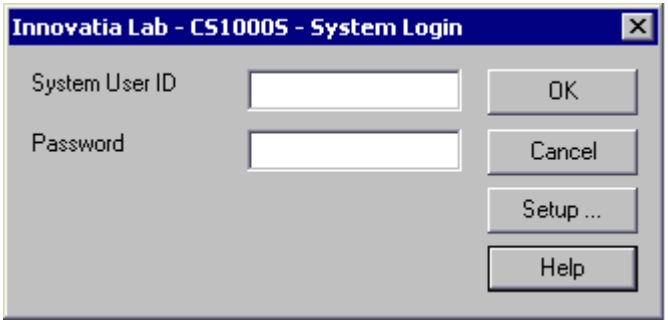
Opening the Alarm Banner dialog box

To open the Alarm Banner dialog box, complete the following:

1 Select **Maintenance > Alarm Banner** in the System window menu.

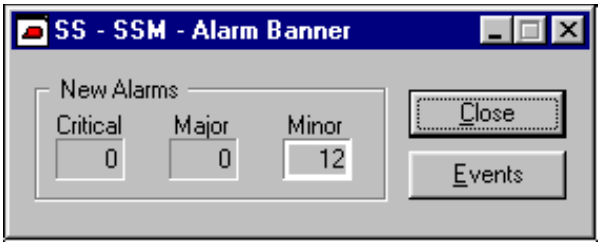
2 Click the **Alarm Banner** icon in the System window toolbar. The System login dialog opens (Figure 279).

Figure 279
System Login



3 Enter System User ID and Password. Press **OK.** The Alarm Banner dialog box opens (Figure 280).

Figure 280
Alarm Banner dialog box



The items in the Alarm Banner dialog box are described in Table 34.

Table 34
Alarm Banner dialog box items

Item	Description
Critical	An alarm that requires your immediate attention.
Major	An alarm that needs your attention.
Minor	An alarm that you can address anytime.
Close	Closes the dialog box.
Events	Displays more information about the events that triggered the alarms.

The Alarm Banner keeps you informed about the current status of the system. You might typically check the current status of the system for the following reasons:

- Standard operating procedure (for example, check every morning)
- Investigating a suspected or reported problem
- Checking and monitoring the system while performing other tasks

End of Procedure

Alarm Banner notifications

The primary function of the Alarm Banner is to notify you when a new alarm arrives in the following ways:

- The outline of the boxes displaying the critical, major, and minor alarm counts flash to indicate the arrival of new alarms.
- The event counts in the Alarm Banner are incremented appropriately.
- One or more beeps sound. This is optional. See "Creating an Event Preference definition" on page 578

The Events Monitor window must be active for the beep to sound.

- If you have closed the Alarm Banner dialog box, the sound notification is provided by the Events Monitor window. The window is not brought to the front, because this may interfere with your current task.

There is no alarm notification beep if the sound has been disabled. The count field outline still flashes and the count increments to indicate the arrival of a new alarm.

Events Monitor window

The Events Monitor window displays the system's Event Log, allowing you to view all recent system alarms and events previously stored in the system's history file. The Events Monitor window displays active events in a way that lets you quickly view the most important events. System events with a severity of critical, major, or minor are considered alarms—alarms are events which may require some corrective action. System events with a severity of Info are for informational purposes only and are not considered alarms.

The Event Log is preserved during and after a sysload and initialization of a system.

Using the Events Monitor window

Once you open the Events Monitor window, you can do the following:

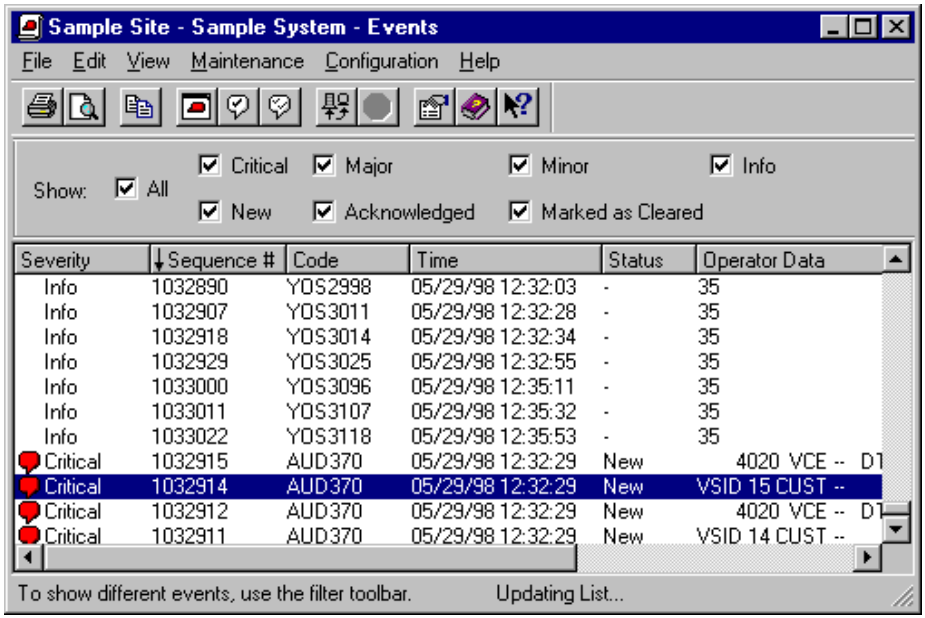
- Obtain a description of an event.
- Acknowledge an alarm you intend to clear—this communicates your intention to others who may be working on the system.
- Locate an alarm in the Event file to identify the cause of the problem.
- Learn more detail about an alarm.
- Mark an alarm as cleared in the list after you have corrected the problem.
- Change system event preferences for all subsequent alarms:
  - Severity of the alarm
  - Escalation threshold for an alarm type

Opening the Events Monitor window

To open the Events Monitor window, choose **Maintenance > Events**. or Click **Events** icon in the System window toolbar.

If you are not connected to a system, the connection login window appears. Once you have connected, the Events Monitor window appears (Figure 281).

Figure 281
Events Monitor window


Sample Site - Sample System - Events
File Edit View Maintenance Configuration Help
Show: All Critical Major Minor Info New Acknowledged Marked as Cleared
Severity Sequence # Code Time Status Operator Data
Info 1032890 YOS2998 05/29/98 12:32:03 - 35
Info 1032907 YOS3011 05/29/98 12:32:28 - 35
Info 1032918 YOS3014 05/29/98 12:32:34 - 35
Info 1032929 YOS3025 05/29/98 12:32:55 - 35
Info 1033000 YOS3096 05/29/98 12:35:11 - 35
Info 1033011 YOS3107 05/29/98 12:35:32 - 35
Info 1033022 YOS3118 05/29/98 12:35:53 - 35
Critical 1032915 AUD370 05/29/98 12:32:29 New 4020 VCE -- D1
Critical 1032914 AUD370 05/29/98 12:32:29 New VSID 15 CUST --
Critical 1032912 AUD370 05/29/98 12:32:29 New 4020 VCE -- D1
Critical 1032911 AUD370 05/29/98 12:32:29 New VSID 14 CUST --
To show different events, use the filter toolbar.
Updating List...

An event remains displayed in the list until expired by the system. The column headings identify and describe the events.

To view detailed information about the menus, toolbar, buttons, and other functions available in the Events Monitor window, use online Help.

Sorting the event list

Alarms and events are listed in order of occurrence. You can sort the list according to another column by clicking in that column heading. This is useful for prioritizing your work when you deal with a large number of alarms.

Click to sort in ascending order; click again for descending order. An arrow in the column heading indicates the current sort column and sort order.

Resizing a column in the event list

If the data does not all fit in a column, you can resize a column by dragging the column divider. You can also choose File > Properties to display complete information about a selected event.

Double-click an alarm, or click What's This to see reference information in Windows Help.

New critical alarms are indicated by an icon located to the left of the word "Critical" in the Severity column. The icon disappears when the alarm is acknowledged.

Using the shortcut menu

When you right-click an alarm, a shortcut menu opens. Table 35 describes the shortcut menu commands.

Table 35
Shortcut menu commands

Command	Description
Copy	Copies selected events to the clipboard. You can then insert the text into another document. Copy is unavailable when no text is selected.
Select All	Selects all events in the list. You can print the selected text or copy it to the clipboard and insert it into another document.
Acknowledge	Changes the status of the selected alarm to Acknowledged. This informs technicians on other OTM systems that the problem is being investigated.
Mark as Cleared	Changes the status of the selected alarm to Marked as Cleared. This informs users on other OTM systems that the problem is solved.
Properties	Displays complete information about the selected event.
What's This? General help option	Changes the cursor to a "question mark" cursor and displays help on the next item you select.

Event list

The event list provides information about each active alarm. You can resize a column by dragging the column divider to make more room for text. Table 36 describes the event list columns.

Table 36
Columns in the event list

Column	Description
Severity	The alarm severity (critical, major, or minor) or a non-alarm event (info). An icon indicates an unacknowledged critical alarm.
Sequence	All events are given a unique sequence number.
Code	A code that identifies the event. It includes the error category (for example NWS) and a 5-digit error number.
Time	The date and time that the alarm occurred.
Status	Current alarm status (appears with a dash "-" for non-alarms). New indicates an alarm has not been acknowledged or cleared. Acknowledged indicates an alarm in the process of being cleared. Marked as Cleared indicates the alarm has been manually cleared.
Operator Data	Data produced by the equipment that generated the event. Its contents may vary. Typically, it includes a description of the event and the equipment affected (component ID information, such as the loop number or TN).

Determining the cause of an alarm

An alarm may be caused by another system event, such as a BUG message. By examining the events immediately preceding an alarm, you may be able to isolate the source of the problem. Use the scroll bar to browse through the event list.

To display Help on a selected alarm, do one of the following:

- Right-click on an alarm and choose item "What's This?".
- Double-click the alarm.

Acknowledging an alarm that you plan to clear

You can acknowledge a new alarm to inform others that you will investigate the problem and clear the alarm. Your acknowledgment appears in the Status column of the event list. The events are updated for all OTM users.

You cannot acknowledge, or mark as cleared, events with a status of Info. You cannot acknowledge alarms that have been marked as cleared.

Procedure 110
Acknowledging an alarm

1 Select the desired alarm(s) in one of the following ways:

- Click to select a single alarm.
- [Shift]+click to select a range of alarms.
- [Ctrl]+click to select multiple alarms.
- Select **Edit > Select All** to select all alarms.

You can usually save time by displaying the type of alarm of interest using the Filter bar before selecting individual alarms.

2 Change the status to acknowledged in one of the following ways:

- Select **Maintenance > Acknowledge**.
- Right-click and select **Acknowledge an alarm** from the shortcut menu.

Once you acknowledge an alarm, the Status field for all selected alarms in the Events Monitor window is marked “Acknowledged.”

End of Procedure

Marking an alarm as cleared

After you fix a problem, you typically mark the associated alarm as cleared. The term *Mark as Cleared* is used because clearing an alarm only indicates that the problem has been fixed—it does not actually fix the problem.

Procedure 111
Marking an alarm as cleared

1 Select the desired alarm(s) in one of the following ways:

- Click to select a single alarm.
- [Shift]+click to select a range of alarms.
- [Ctrl]+click to select multiple alarms.
- Select **Edit > Select All** to select all alarms.

You can usually save time by displaying the type of alarm of interest using the Filter bar before selecting individual alarms.

2 Change the status to mark as cleared in one of the following ways:

- Select **Maintenance > Mark as Cleared**.
- Right-click and select **Mark as Cleared** from the shortcut menu.

Acknowledgment and clearing of alarms is optional. You can clear alarms without first acknowledging them. If you do not clear alarms, the oldest alarms are deleted by the system when it reaches the maximum number of alarms.

End of Procedure

Nortel recommends that you clear alarms as you fix problems so that the Events Monitor window accurately reflects the state of the system. Events with a status of Info cannot be acknowledged or marked as cleared. Alarms that have been marked as cleared cannot be acknowledged.

When you clear an alarm, the following happens:

- The Alarm Status field for all selected alarms is updated in the System Event File with “Marked as Cleared.”
- The counts in the Alarm banner dialog box are adjusted appropriately for all users.

Getting details about an alarm

To learn more about selected alarms, do one of the following:

- Select **File > Properties**.
- On the toolbar, click **Properties**.
- Double-click on an alarm to see online Help information.

Changing alarm severity or escalation

To specify the severity of events (critical, major, minor, or info) on a per-system basis, select **Configuration > Event Preferences**.

The system uses an Event Default Table that predefines the severity of all events. Typically, you modify these settings only when you install or upgrade the system. See "Creating and customizing event preferences" on page 577.

Viewing the Event Default Table

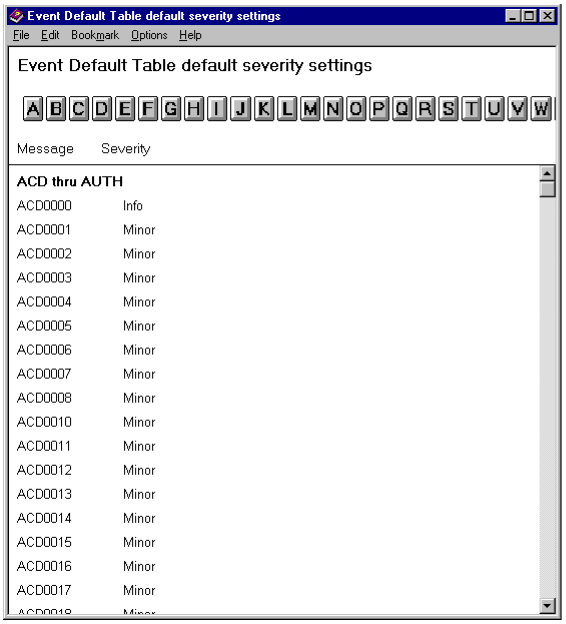
The Event Default Table contains the default severity settings of all system events. Use the table to verify default settings before you add event preferences.

1 Select **Configuration > Event Preferences**.

2 Select **Event Default Table** from the Help menu in the Event Preferences window.

The Event Default Table window opens Figure 282 on page 577.

Figure 282
A portion of the Event Default Table window



Creating and customizing event preferences

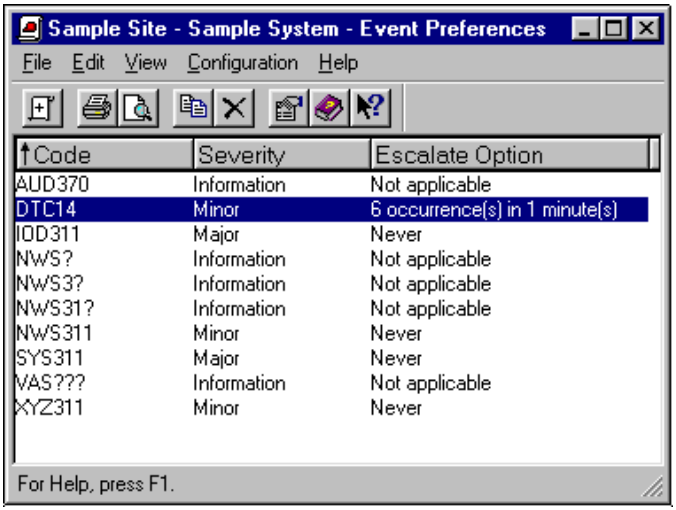
You can change alarm severities for this system by changing the default alarm severity and escalation threshold using the Event Preferences window. The escalation setting defines the maximum number of times an event can occur within a defined period of time before it escalates to the next higher level of severity. For example, if you set escalation to “10 occurrences in 1 minute” for a minor alarm, the alarm escalates to a major alarm when it occurs more than 10 times within a 1-minute period. See “Creating an Event Preference definition” on page 578 for steps describing how to set escalation parameters.

Before changing an alarm definition, you may want to look up the default settings in the Event Default Table. See “Viewing the Event Default Table” on page 576.

To open the Event Preferences window, select **Configuration > Event Preferences:**

The Event Preferences window opens (Figure 283).

Figure 283
Event Preferences window



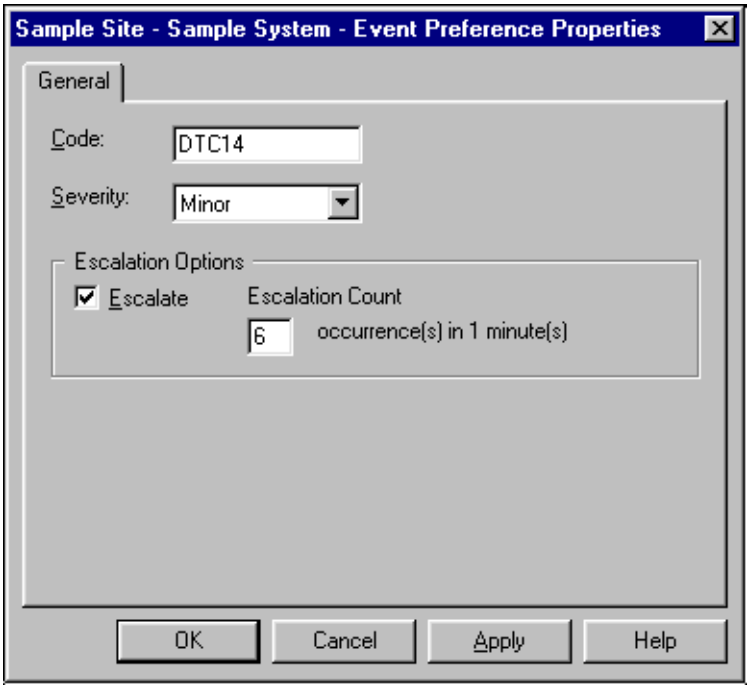
Creating an Event Preference definition

Procedure 112
Creating an Event Preference definition

1 Select **Configuration > Add Event Preference**.

The Event Preference dialog box opens with the General tab displayed (Figure 284).

Figure 284
Event Preference Properties dialog box—General tab



2 In the Code field, type the alarm or event ID.

The ID includes the event category, such as BUG, or NWS, and the 5-digit event number.

You may use the wildcard symbol ? to represent a group of error code numbers. For example, NWS3?? represents all error codes between NWS300 and NWS399.

Use one of the following wildcard ? designations when representing a group of error code numbers. XXX=a selected event category, for example, BUG?,BUG??,or BUG???.

- XXX? = XXX001 through XXX009
- XXX?? = XXX010 through XXX099
- XXX??? =XXX100 through XXX999

3 To change the alarm severity, from the severity list, choose a severity type.

4 To change the escalation threshold, check the Escalate box, and type a number in the Escalation field.

The escalation setting defines the maximum number of times an event can occur within a defined period of time before it escalates to the next higher level of severity. This defined period of time is determined by the system's Global Window Timer. For example, if you set escalation to "10 occurrences in 1 minute" for a minor alarm, the alarm escalates to a major alarm when it occurs more than 10 times within a 1-minute period.

The Global Window Timer is set in LD 117 and can range from 0–60 minutes. In this example, the Global Window Timer is set to 1 minute.

5 Click **OK**.

End of Procedure

Configuring alarms on the system

The Events Monitor window displays the events stored in the Meridian 1 or system's Event Log. To display the system's events in the OTM web-based Alarm Browser, you must enable the open alarms feature in LD 117. You may also want to suppress minor and informational alarms going to the OTM Server.

Enabling Meridian 1 system alarms with LD 117

Procedure 113
Enabling Meridian 1 system alarms with LD 117

1 In the OTM system window, on the toolbar, click the System Terminal icon.

The System Terminal Selection dialog box opens.

2 Click **Ethernet/PPP** (Overlay Passthru), and then click OK.

The System Terminal window opens.

3 Log in with your administrator's user name and password.

You must have appropriate access privileges to use LD 117.

4 Enter:
ld 117

The => prompt appears in the Command Results pane indicating that the system terminal application is ready to accept your input.

5 Enter:
prt open_alarm

A list of slots currently in use appears. Slots are numbered from 0–7, for a total of 8 available slots. Note the number of the next available slot.

6 Enter:
set open_alarm <*n*> <*IP_address*>

where *n* is the next available slot number, and *IP_address* is the IP address of your OTM Server. See "Sample LD 117 session" on page 581 for more information.

CAUTION — Service Interruption
If you assign your IP address to a slot currently in use, you disconnect the current user from the system, and prevent them from receiving alarm information.

7 Enter:
prt open_alarm.

The list of slots and IP addresses receiving alarms appears. Verify that your particular slot and IP address are included.

LD 117 accepts abbreviations of the various commands. For example, you can type the abbreviation **prt op** instead of **prt open_alarm.**

8 Enter:
prt suppress
prt suppress_alarm

This shows the current alarm suppression settings.

9 Enter:
chg suppress_alarm <*n*>

This sets the alarm suppression, where *n* is 0 = All, 1 = Minor, 2 = Major, 3 = Critical. For example, to suppress all alarms except critical, enter 3.

10 Enter:
prt suppress
prt suppress_alarm

This allows you to verify the changes.

11 Enter:
prt timer

This allows you to view the Global Window Timer setting . The escalation and suppression thresholds are based on the Global Window Timer. The default value is one minute. To change the timer, enter **chg timer <*n*>**, where *n* is 0–60 minutes.

12 Log out and close the system terminal window.

Sample LD 117 session

The following is a representative sample of a system terminal session using LD 117 to enable alarms. In this example, the OTM PC that will receive alarms has the IP address 47.82.40.6. Slots 0 and 1 are already in use by other PCs. Use the next available slot

2 to enter the new OTM PC IP address. Note the => prompt used by the overlay. All IP addresses are for example purposes only. Additional information about LD 117 is available in the online Help.

```
login admin1
PASS?
WARNING: THE PROGRAMS AND DATA STORED ON THIS SYSTEM ARE LICENSED
TO OR ARE THE PROPERTY OF NORTEL NETWORKS AND ARE LAWFULLY
AVAILABLE ONLY TO AUTHORIZED USERS FOR APPROVED PURPOSES.
UNAUTHORIZED ACCESS TO ANY PROGRAM OR DATA ON SYSTEM IS NOT
PERMITTED. THIS SYSTEM MAY BE MONITORED AT ANY TIME FOR
OPERATIONAL REASONS. THEREFORE, IF YOU ARE NOT AN AUTHORIZED
USER, DO NOT ATTEMPT TO LOGIN.

BSD000
.ld 117
OAM000
=> prt open_alarm
Open Alarm destination #0 is 47.82.40.237
Open Alarm destination #1 is 47.82.40.119
=> set open_alarm 2 47.82.40.6
=> prt op
Open Alarm destination #0 is 47.82.40.237
Open Alarm destination #1 is 47.82.40.119
Open Alarm destination #2 is 47.82.40.6
```

Alarm Notification application

The Alarm Notification application uses the existing OTM architecture to connect to Meridian 1 systems, Communication Server 1000 systems, and other supported systems and equipment that can generate SNMP events, to detect specified events. For systems, the SNMP Open Alarms package (315) must be present and activated, along with the packages required for OTM.

OTM alarm notification process

The Alarm Notification application receives SNMP events from designated network equipment over an Ethernet network and sends out alarm notifications when specified event conditions are detected. Received events are compared to a set of rules which may activate notifications of different types. These notifications include the following:

- Console
- SNMP traps or events transmitted to predefined destinations
- Text notification over a modem
- Pager notification to alpha or numeric pagers
- Electronic mail using Simple Mail Transfer Protocol (SMTP)
- Log

The log is not an alarm notification but is included because it describes system events.

SNMP events appear at the OTM PC in the Alarm Notification window. You can also view events with a web browser connected to a configured web server. When the application starts, three application control files are loaded: a devices file, a configuration file, and a scripts file.

These control files must be present and configured for the Alarm Notification application to work correctly. See "Setting up alarm notification" on page 586.

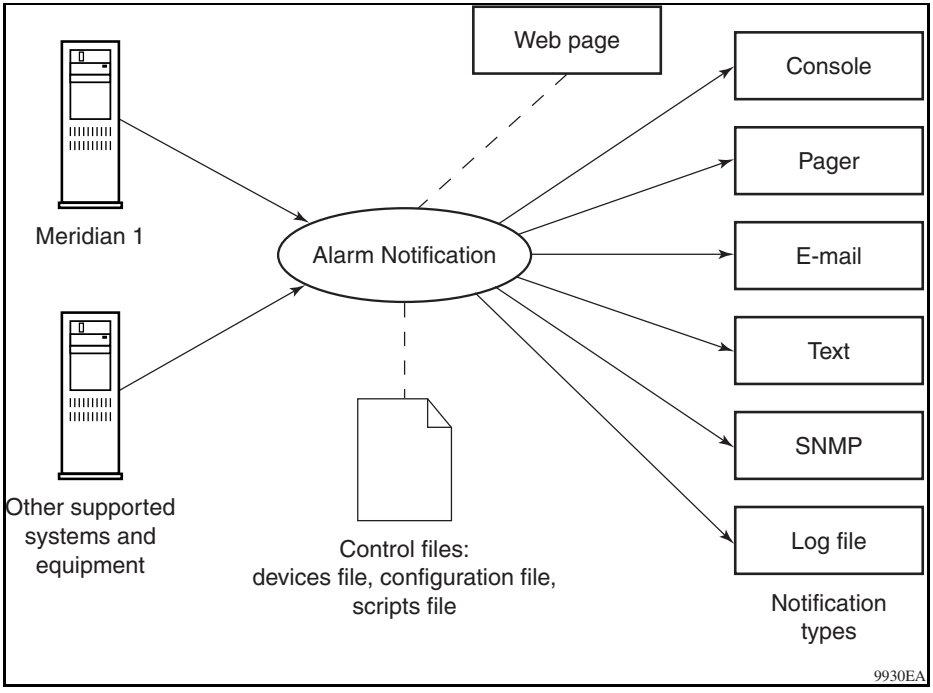
The devices file specifies the SNMP devices to be monitored. You must define the devices file before you can start alarm monitoring. A sample devices file, Devices.txt, is provided in the OTM directory.

The configuration file defines the event information (SNMP traps) that may be received. The file should contain definitions for all SNMP traps that may be sent by devices specified in the devices file. Event values are mapped to variable names, which you may use in the scripts file. You must define the configuration file before you can start alarm monitoring. A sample configuration file, Config.txt, is provided in the OTM directory.

The scripts file defines how alarms are processed and which notifications are used.

Figure 285 shows a functional overview of the Alarm Notification application.

Figure 285
Overview of Alarm Notification application



A scripting language is included within the application to allow you to define alarm processing and notifications. An external text editor is required to create scripts.

Use the scripting language to define the following:

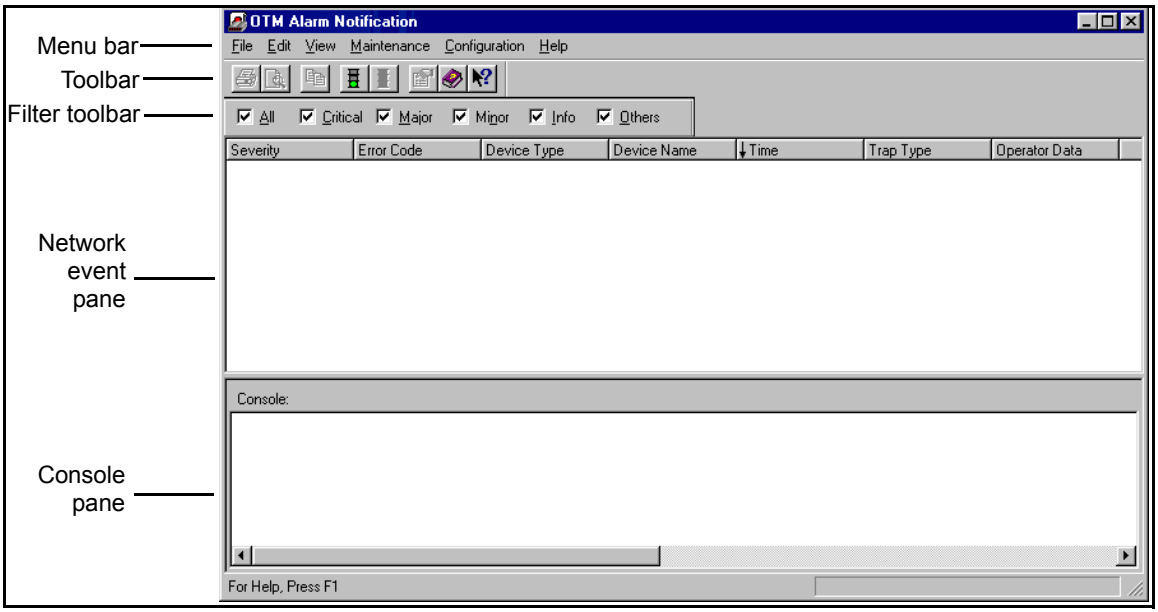
- How to process events
- New responses and notifications to predefined events

Events from undefined devices are ignored.

Opening the Alarm Notification window

To access the Alarm Notification window, select **Utilities > Alarm Notification**. The Alarm Notification window opens (Figure 286).

Figure 286
Alarm Notification window



The top pane of the Alarm Notification window, the Network Events browser, displays all events received since starting the application. The bottom pane, called the console, displays notifications defined in the script sent to *con*.

To view information about the menus, toolbar, column headings, window panes, and other functions available in the Alarm Notification window, use Help.

You use the Alarm Notification window to do the following:

- Start, stop, and restart alarm processing.
- Specify the control files used by the application.
- View events as they are received from defined systems and devices.
- View script and notification output in the console as they are received.
- View received events.

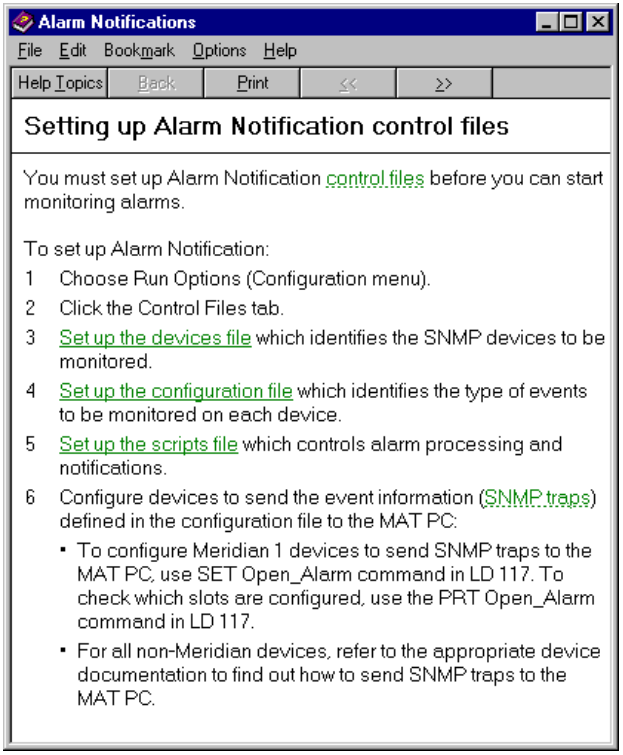
Setting up alarm notification

Before alarm notification can function correctly, you must set up control files. Control files include the devices file, the configuration file, and the scripts file.

To set up alarm notification, complete the following tasks:

1. Make sure you have the control files correctly installed and the Run Options defined. See "Setting up a devices file" on page 587 for more information. You can also use Help in setting up the control files as shown in Figure 287.
2. Determine the IP address of your OTM PC on which you will view the events. This PC must have Alarm Notification correctly installed. The PC must be networked with the system to be monitored. See "Sample LD 117 session" on page 581 for information on determining the IP address.
3. Use LD 117 to enable alarms to be sent to your OTM PC. See "Enabling Meridian 1 system alarms with LD 117" on page 580.

Figure 287
Help for setting up control files


Alarm Notifications
File Edit Bookmark Options Help
Help Topics Back Print << >>
Setting up Alarm Notification control files
You must set up Alarm Notification control files before you can start monitoring alarms.
To set up Alarm Notification:
1 Choose Run Options (Configuration menu).
2 Click the Control Files tab.
3 Set up the devices file which identifies the SNMP devices to be monitored.
4 Set up the configuration file which identifies the type of events to be monitored on each device.
5 Set up the scripts file which controls alarm processing and notifications.
6 Configure devices to send the event information (SNMP traps) defined in the configuration file to the MAT PC:
▪ To configure Meridian 1 devices to send SNMP traps to the MAT PC, use SET Open_Alarm command in LD 117. To check which slots are configured, use the PRT Open_Alarm command in LD 117.
▪ For all non-Meridian devices, refer to the appropriate device documentation to find out how to send SNMP traps to the MAT PC.

Installing Alarm Notification control file

Make sure you have the control files correctly installed. Control files define which systems are monitored and which events are processed. For detailed instructions about defining Run Options, consult the online Help.

Setting up a devices file

The *devices file* contains the list of monitored systems. SNMP traps that a device sends must be defined in the configuration control file. You can add reference information to monitored systems specifying the following:

- The IP address of the system or its system name
- An alias for any system name or IP address

Within the Alarm Notification application, you can reference systems by the specified alias.

See "Control files included with alarm notification"," for more information about the contents of the devices file.

Procedure 114
Setting up a devices file

To set up a devices file:

1 In the Windows Explorer, rename a copy of the sample Devices.txt file, located in the OTM directory:

`X:\Nortel\Common Data\Alarm Notification\Control Files`

For example, the new filename might be *my_devices*.

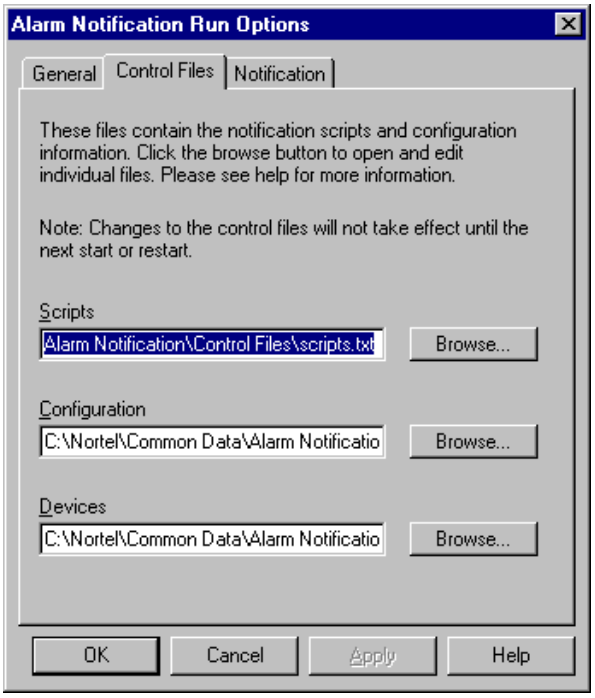
Caution: Do not work directly in the sample Devices.txt file. This file is overwritten when OTM is reinstalled or upgraded and any changes will be lost.

2 In the Alarm Notification application, select **Configuration > Run Options**.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

3 Click **Control Files** tab (Figure 288).

Figure 288
Alarm Notification Run Options window—Control Files tab



4 Next to the Devices field, click **Browse**.

The Open dialog box opens.

Ensure device is added to receive alarms from CS 1000 systems.

5 Find and select the new devices file, and then click Open.

6 Replace the IP address with the IP address of your system.

You may also provide an alias.

7 For each additional system or non-Meridian device to be monitored, enter a device type name, an IP address, and (optionally) an alias.

- Device type represents the type of device (for example, XYZrouter). You use this name in the configuration file to identify SNMP traps.
- IP address or PC host file name. If the PC host file is used, the address is obtained from the PC host file.
- Aliases are alternate names you can define that identify each device within the Alarm Notification window.

8 Save the file as text and close the window. Keep a backup copy of your devices file on your local drive.

End of Procedure

Example of device file entries listing monitored Meridian 1 systems:

```
Meridian1 147.114.45.6 nmkpy716
Meridian1 147.114.45.4
Meridian1 nmkpy711 myM1
```

Setting up a configuration file

A sample configuration file is provided. Complete the following procedure only if you want to monitor additional devices, such as routers or printers. Otherwise, you may skip this procedure. See "Control files included with alarm notification"," for more information about the contents of the configuration file.

Procedure 115
Setting up a configuration file

To set up a configuration file:

1 In the Windows Explorer, rename a copy of the sample Config.txt file, located in the OTM directory:

`X:\Nortel\Common Data\Alarm Notification\Control Files`

For example, the new filename might be *my_config.*

Caution: Do not work directly in the sample Config.txt file. This file is overwritten when OTM is reinstalled or upgraded, and any changes will be lost.

2 In the Alarm Notification application, select **Configuration > Run Options**.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

3 Click the Control Files tab (Figure 288 on page 588).

4 Next to the Configuration field, click Browse.

The Open dialog box appears.

5 Find and select the new configuration file, and then click **Open**.

6 To add a new SNMP trap, type the word **`device`** followed by the device name (as defined in the devices file), followed by the major and minor trap types associated with the device (refer to the device manual), or the appropriate SNMP MIB.

7 Below the device name, enter the following information for each event to be monitored on the device:

- Object identifier associated with the event (refer to the device manual to find this information).
- Variable type (only “integer” and “string” are supported).
- Variable name (you use the variable name to refer to this event in notification scripts).
- Event name (in quotations). This name identifies the event in the Alarm Notification window.

See “Example of configuration file entries for Meridian 1 systems:” on page 591.

You may use the standard system event definitions (variable type, variable name, and event name) to define similar variables for non-Meridian devices. The standard Meridian event names map the event values to corresponding fields within the Alarm Notification window and Event Properties sheet. If non-standard definitions are used, event information appears in the Additional Information field.

8 Repeat steps 6 and 7 for each non-Meridian 1 or CS 1000 device to be monitored.

9 Save the file as text and close the window.

End of Procedure

The following example shows the standard configuration file to process Meridian 1 and CS 1000 system events. Modify this file to add other systems to be managed. Users should be familiar with scripting logic and programming principles to effectively use and extend this application’s capabilities.

Example of configuration file entries for Meridian 1 systems:

```
device Meridian1 6.10 {
1.3.6.1.4.1.562.3.3.7.1.0integer $CurrentAlarmSeqNum
1.3.6.1.4.1.562.3.3.7.2.0 string $CurrentAlarmTime
1.3.6.1.4.1.562.3.3.7.3.0integer $CurrentAlarmSeverity "Severity"
1.3.6.1.4.1.562.3.3.7.4.0 string $CurrentAlarmErrorCode "Error
Code"
1.3.6.1.4.1.562.3.3.7.5.0 string $CurrentAlarmComponentId
1.3.6.1.4.1.562.3.3.7.6.0 string $CurrentAlarmComponentAddress
1.3.6.1.4.1.562.3.3.7.7.0 string $CurrentAlarmDescriptiveText
"Text"
1.3.6.1.4.1.562.3.3.7.8.0 string $CurrentAlarmOperatorData
"OperatorData"
1.3.6.1.4.1.562.3.3.7.9.0 string $CurrentAlarmExpertData "Expert
Data"
1.3.6.1.4.1.562.3.3.7.10.0string $CurrentAlarmCounts
}
```

Contained in the configuration file is a set of SNMP trap definitions, each followed by a list of the monitored devices of that type. Each trap definition begins with the word device, followed by the device name, and followed by a list of variables for the defined trap. For the example above, the designated name is Meridian 1, and the trap number is 10.

The next lines contain SNMP object identifiers, followed by a variable type, and followed by a variable name and an optional printable name in quotes. The variable name may be referenced in the scripting language and the printable name appears in the Network Event browser pane in the Alarm Notification window.

Only integer and string values are supported in the device definition entries.

Setting up a scripts file

The scripts file defines alarm processing and notification. A sample scripts file is provided, which you can modify. See "Script file summary" on page 875," for more information about the contents of the scripts file.

Procedure 116
Setting up a scripts file

To set up a scripts file:

1. In the Windows Explorer, rename a copy of the sample Scripts.txt file, located in the OTM directory:

   `X:\Nortel\Common Data\Alarm Notification\Control Files`

For example, the new filename might be *my_scripts*.

Caution: Do not work directly in the sample Scripts.txt file. This file is overwritten when OTM is reinstalled or upgraded, and any changes will be lost.

2 In the Alarm Notification application, select **Configuration > Run Options**.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

3 Click **Control Files** tab (Figure 288).

4 Next to the Scripts field, click **Browse**.

The Open dialog box appears.

5 Find and select the new scripts file, and click **Open**.

6 Use the sample script as a guide to create your own notification script file.

For an example of scripts files, see “Sample alarm notification scripts” on page 633, and "Script file summary".”

7 Save the file as text and close the window.

End of Procedure

A script includes variables, rules, notifications, functions and logical expressions that evaluate and may apply to event data. See “Scripting” on page 594. Values defined within a script are exclusive and visible only to that script. The script container is delimited by “curly” brackets { }. You can define global values that are visible to all scripts.

When the Alarm Notification application starts, each script is executed in the order defined in the script file.

Setting up auto-start for scripts

Once the control files are defined, use the following procedure to automatically load the scripts when you start the Alarm Notification application:

Procedure 117
Setting up auto-start for scripts

1 In the Alarm Notification application, select **Configuration > Run Options**.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

2 Click **Auto-start scripts on program launch** box.

The scripts are automatically loaded each time that you start the application.

End of Procedure

Events processing

Events received appear in the network event pane. As each event is received, it is placed in a queue for processing by the application. Each event is checked to see if it originates from a defined system or supported equipment. Events received from undefined systems devices are ignored and discarded from the queue.

The application executes every applicable script for each specific event type. If a rule is matched to an event type, the output appears in the Alarm Notification window console pane or is sent as one of the other available notification types (for example, e-mail or pager), according to the script. Output to the console pane occurs immediately, but notifications are written to disk.

The notification process periodically polls the notifications and sends them to the specific device or function for this notification type. If directed by the script, results of the notification appear in the console pane. If a failure occurs due to power interruption or software or hardware error, the unprocessed notifications are completed on restart.

Viewing event properties

The Alarm Notification application receives events from many different systems and devices. Each event source may have different characteristics requiring you to enter different information to fully define an event source. You can identify the event source in the Event Properties dialog box.

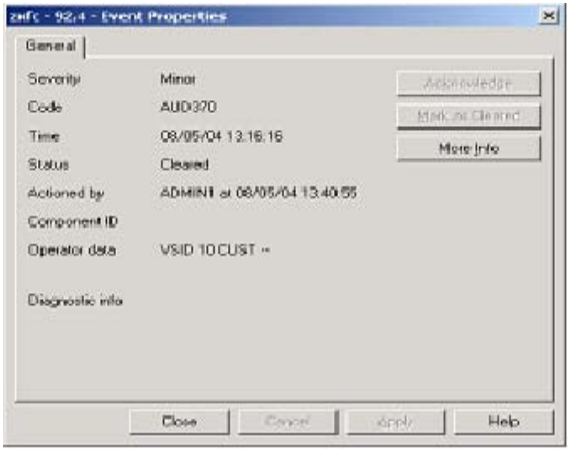
To view event properties:

1 In the network event pane, select an event.

2 Click **Properties**.

The Event Properties dialog box opens with the General tab displayed. (Figure 289)

Figure 289
Event Properties dialog box—General tab



For information on the fields in the Event Properties dialog box, refer to online Help.

The Event Properties dialog box is optimized for system events.

The Alarm Notification application processes events you have defined in the configuration file from specific systems or devices you have defined in the devices file. Events from undefined systems or devices are ignored.

Scripting

Scripting is the process of using the syntax of the programming language in the Alarm Notification application to create text files specifying that certain actions be taken for defined events. A script includes one or more logical expressions that evaluate event data and provide notification instructions. The script file may contain many scripts. When the Alarm Notification application starts, all scripts are run against each new event as it is received.

Scripts are run in the order defined in the script file. To cause a script to be skipped when it is not applicable, use the *when* operator. You must be familiar with scripting logic and programming principles to effectively use and extend this application's capabilities.

Scripting syntax includes the following:

- Variable types
- Referencing variable names from *Config.txt*

- Defining devices in Devices.txt
- Scripts
- Operators
- Notifications
- Conditional expressions
- Rules
- Comments
- Functions

The syntax is described in the following sections. Consult the online Help for specific examples of scripting syntax.

The indentations in the examples presented in this section facilitate reading the script and do not affect how the script is interpreted by the application.

Variable types

The scripting language supports three variable types: counter, timer, and string. The names of these variables must begin with an alpha character and may be of any length

Variables are case sensitive.

Counter

Counters contain signed integer values. You may assign values to counters when you define them, and you may include multiple variables of the same data type in the same statement. Counters can be global to a script or local to a function.

Syntax:
```
counter variable_name:=0;
```

Example:
```
counter n;
n:=n+1;
if(n=5)
{
.../*Send notification*/
}
```

Timer

Timers are counters that are automatically incremented when the time changes. Default timers increment once every minute. You may define specific update intervals other than the default increment. Timers cannot be defined in a function; they must be used globally in a script.

Syntax:

```
timer variable_name;
```

Example:

```
script SampleScript {

/*Notification Counters definition*/
  counter count_ns_Meridian1:=0;

/*Notification Timer definition*/
  timer time_Meridian1;

..........

if(time_Meridian1>3) /*i.e. after 3 minutes*/
  {
   .../*Send notification*/
  }
}
```

String

Strings contain arbitrary alphanumeric data. A default string contains up to 80 characters. If more data is placed in a string than the string definition allows, the application truncates the entry.

Syntax:

```
string variable_name;
```

Example:

```
string severity;
if(severity="critical")
{
  .../*Send notification*/
}
```

Longer or shorter strings may be explicitly specified and initialized as follows:

```
string more_stuff[255]:="Alarm Notification";
```

Referencing variable names from *Config.txt*

Alarm Notification processes events of a specified type from specified devices. These events are SNMP traps. Values contained in SNMP traps are mapped to variables that are referenced in Alarm Notification scripts. All relevant variables are updated with each incoming event.

Table 37 lists the four variables that are defined for all incoming events.

Table 37
Variables included in all incoming events

Name	Type	Contents
$CurrentTrapSource	string	Name or IP address of the event source
$CurrentTrapDevice	string	Name of the device as defined in the configuration file
$CurrentTrapMajor	string	Major trap type
$CurrentTrapMinor	string	Minor trap type

The configuration file *Config.txt* contains a device definition for each type of device that is monitored by OTM. The *Devices.txt* file contains a list of monitored devices. All events from undefined devices are ignored. "Defining devices in Devices.txt" on page 599.

The following example shows the standard configuration information required to process events from Meridian 1 systems as contained in the *Config.txt* file:

Config.txt example:

```
device Meridian1 6.10 {
   1.3.6.1.4.1.562.3.3.7.1.0  integer       $AlarmSeqNum
"Alarm Seq Num"
   1.3.6.1.4.1.562.3.3.7.2.0  string        $DeviceTime
"Device Time"
   1.3.6.1.4.1.562.3.3.7.3.0  integer       $Severity
"Severity"
   1.3.6.1.4.1.562.3.3.7.4.0  string        $ErrorCode
"Error Code"
   1.3.6.1.4.1.562.3.3.7.5.0  string        $SystemComponent
"System Component"
   1.3.6.1.4.1.562.3.3.7.6.0  string        $ComponentAddress
"Component Address"
   1.3.6.1.4.1.562.3.3.7.7.0  string        $Text
"Text"
   1.3.6.1.4.1.562.3.3.7.8.0  string        $OperatorData
"Operator Data"
   1.3.6.1.4.1.562.3.3.7.9.0  string        $ExpertData
"Expert Data"
   1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts
}
```

Each device definition begins with the word `device` followed by the device name and a list of SNMP traps allowed from the device. The first column contains SNMP object identifiers. The second column gives the variable type; only integer and string type variables are permitted. The third column lists the variable name, and the fourth column provides the optional printable name of the variable. The printable name appears in quotes. The variable name is referenced in the scripting language while the printable name appears in the Alarm Notification window and Alarm browser.

In the following example, the variables `$ErrorCode`, `$DeviceTime`, `$Text`, and `$OperatorData` are referenced from the *Config.txt* file. `$CurrentTrapSource` is a variable that is defined for all events (Table 37 on page 597).

Example:

```
send(con,
  "--> Critical Meridian1 alarm received!".
  $ErrorCode,"-",//M1 error code
  $CurrentTrapSource,"-",//Name of this M1
  $DeviceTime,"-",//Timestamp from M1
  $Text,"-",//Text with error message
  $OperatorData//More text with error message
);
```

You may add definitions to the *Config.txt* file for non-Nortel devices; however, you should not attempt to modify the definitions associated with the Nortel devices provided in this file.

To view the entire contents of the *Config.txt* file, see “Configuration file” on page 883 of "Control files included with alarm notification".”

Defining devices in *Devices.txt*

The *Devices.txt* file contains a list of the devices to be monitored. For each device, list the device type as it appears in the *Config.txt* file, followed by the IP address or host name of the device. You may also include an alias for the device. If an alias is defined for the device, the device is referenced using the specified alias in the Alarm Notification application.

Examples:

```
Meridian1 192.9.200.1
CALL_PILOT sample_cp
Meridian1 192.9.200.2 Toronto_11C
```

To view the contents of the *Devices.txt* file, see “Devices file” on page -882 of "Control files included with alarm notification".”

Scripts

A script is a container for variables, rules, notifications, and functions. Anything that is defined within a script is only visible in that script. Variables, rules, notifications, and functions may also be defined outside of scripts. These are known as global definitions. Global definitions are available to be used in all scripts. If a definition with the same name as a global definition exists within a script, the script definition takes precedence over the global definition for the given script.

At run time, each script is executed in the order in which it is defined.

Example:

```
script example1 {
}
```

To skip non-applicable scripts, use the “when” operator. In the following example, the code declared within *example2* only executes if the incoming event is from a device that is defined as being a Meridian 1.

Example:

```
script example2 when ($CurrentTrapDevice="Meridian1"){
}
```

Operators

Scripts usually contain a logical expression for testing event data. Logical expressions support operators that you can use in any combination. Use parentheses to clarify the order of operations.

The Alarm Notification application supports the operators described in Table 38.

Table 38
Operators

Operator	Description
+, -, *, /	Addition, subtraction, multiplication, division
<, <=	Less than, less than or equal
>, >=	Greater than, greater than or equal
=, !=	Equal, not equal
<>	Contains (look for substrings)
and, or	Logical and, logical or (case sensitive)
:=	Assigns a value to a variable. The data types must agree or a compiler error will result when the script is executed. If a value is assigned to a string value, the string must be declared large enough to contain the new value.

The logical operators “and” and “or” are case-sensitive.

Example:

```
counter n;
if(
    (($CurrentTrapSource="164.164.8.99") or
($CurrentTrapSource="164.164.8.98"))
       and ($CurrentTrapDevice="Meridian1") and
(($NormalizedSeverity=Critical))
  ){
       n:=n+1;
       if(n=3)
          {
          .../*Send notification*/
          }
}
```

For additional examples of how these operators are used, see "Sample alarm notification scripts" on page 633, and "Script file summary"."

Conditional expressions

The following section describes the conditional expressions that are available for use in Alarm Notification scripts.

if / else

The *if* and *else* expressions can be used with both arithmetic and logical operators.

Syntax:

```
.
.
if (condition A){
...
}
else
}
.
.
```

Example:

```
if($CurrentTrapDevice="Meridian1" or
$CurrentTrapDevice="Communication Service"){
   convertit(); //Any function
}
```

The following is an example using conditional expressions that is not allowed:

```
if (condition A){
...
}
else if (condition B){
...
}
else {
...
}
```

Instead, use the following:

```
if (condition A){
...
}
else {
   if (condition B){
   ...
   }
   else {
   ...
   }
}
```

The do while loop

The *do while* loop can only be used inside a function.

Syntax:

```
do{
...
} while (Condition);
```

Example:

```
.
.
counter c;
do{
 send(con,
     "--> Critical Meridian1 alarm received! ",
     $ErrorCode," - ",   //M1 error code
     $CurrentPCTime," - ",//Time that PC received the alarm
     $CurrentTrapSource," - ",//Name of this M1
     $DeviceTime," - ",  //Timestamp from M1
     $Text," - ",        //Text with error message
     $OperatorData       //More text with error message
 );
 c:=c+1
} while (c<3); //Send any notification (in this case to console)
three times
.
.
```

The for loop

The *for* loop can only be used inside a function.

Syntax:

```
for(count:=0;count<n;count:=count+1){
...
}
```

Example:

```
   .
   .
   counter c:=0;
   for(c:=0; count<2; c:=c+1){
            send(OtmOpenAlarm1,
"1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
 Alarm's Seq Number
"1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          //
 Date and Time
"1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
 Severity
"1.3.6.1.4.1.562.50.1.2.4.0", "Integer",     $NameSpace,           //
 Name Space
"1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           //
 Error Code
"1.3.6.1.4.1.562.50.1.2.6.0", "OctetString", $Site,                //
 Site
"1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              //
 System
"1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
 System's Component
"1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
 Originating Agent
"1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
 Problem Isolation Data1
"1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
 Problem Isolation Data2
"1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
 Problem Isolation Data3
      );
   }      //Send any notification (in this case a trap) twice
   .
   .
```

The when construct

Use the *when* construct to skip a script when it is not applicable.

Syntax:

```
script convert when (condition){
  function convertit(){
...
}
rule conversion {
...
}
```

Example:

```
script convertM1Severities when ($CurrentTrapDevice="Meridian1" or
$CurrentTrapDevice=”CALL_SERVER”)
{
function convertit()
{
   if ($Severity=1)
   {
      $NormalizedSeverity:=Minor;
   }
   else
   {
      if ($Severity=2)
      {
         $NormalizedSeverity:=Major;
      }
      else
      {
         if ($Severity=3)
         {
            $NormalizedSeverity:=Critical;
         }
         else
         {
            if ($Severity=4)
            {
               $NormalizedSeverity:=Unknown;
            }
            else
            {
               if ($Severity=5)
               {
                  $NormalizedSeverity:=Warning;
               }
               else
               {
                  if ($Severity=6)
                  {
                     $NormalizedSeverity:=Cleared;
                  }
                  else
                  {
                     if ($Severity=7)
                     {
                        $NormalizedSeverity:=Undetermined;
                     }
                     else
```

```
                                        {
                                            $NormalizedSeverity:=Info;
                                        }
                                    }
                                }
                            }
                        }
                    }
                }

                rule severity_conversion {
                    if ($CurrentTrapDevice="Meridian1" or
$CurrentTrapDevice=”CALL_SERVER”)
                    {
                        convertit();
                    }
                }

            } // end script convertM1Severities
```

Notifications

Notifications define the message text and the means by which it is conveyed. The Alarm Notification application supports the notification types shown in Table 39.

Table 39
Notification types (Part 1 of 2)

Name	Definition
console	Sends output to the console pane in the Alarm Notification window. This type of notification is the simplest and contains no fields.
npager, apager	Sends messages to numeric (npager) or alphanumeric (apager) pagers.
email	Sends an e-mail message to a remote system using Simple Mail Transfer Protocol (SMTP). For e-mail to work correctly, an SMTP-capable host must be accessible to the OTM PC.
modem (text)	Sends message text from the OTM PC to a remote system, such as an alarm collection management workstation through an attached modem. To use this feature, a modem and a phone line must be connected, supported, and available. If the destination is busy, the Alarm Notification application retries later or sends the message to an alternate destination. Use the Alarm Notification Run Options dialog box to define additional actions.

Table 39
Notification types (Part 2 of 2)

Name	Definition
snmp	Sends SNMP traps to a remote system.
file	Saves the output to disk as a text file.

Notification types

All notification types except console accept the days and times fields. The days field may contain a quoted list of valid days, for example, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, or a range of valid days, for example, Sunday-Saturday. You may specify different destinations depending on the current day, date, time, or alarm notification type.

Use the send syntax to direct Alarm Notification to deliver six types of notifications:

- Console
- Pager
- E-mail
- Text (over modem)
- SNMP
- Log file

Console

The console notification type displays a notification in the console pane in the Alarm Notification window. No parameters are required. A default console notification, con, is provided.

Example:

```
// (no definition necessary)
.
.
.
// send a console notification
if($CurrentTrapDevice=”Meridian1” and $NormalizedSeverity=Critical){
  //Print event to console
send(con,"--> Critical Meridian1 alarm received!",
     $ErrorCode," - ",                    // M1 error code
 $CurrentPCTime," - ",                    // Time that PC received the alarm
 $CurrentTrapSource," - " ,               // Name of this M1
       $DeviceTime," - " ,                // Timestamp from M1
     $Text," - ",                         // Text with error message
     $OperatorData);                      // More text with error message
    );
}
```

This script displays the text “--> Critical Meridian1 alarm received!” followed by the values for the listed traps, which includes the error code, the current PC time, name of the M1, time when the alarm occurred, text associated with the error code, and the Operator data. Note the use of `con` with the `send` syntax in the script.

Pager

Alarm Notification supports both alphanumeric and numeric pagers. You define the list of paging destinations and supported functionality for each pager. Be sure you have a modem and a valid phone line connection. Messages must match the pager type: up to 30 characters for alphanumeric pagers and only digits for numeric pagers.

Mandatory parameters are:

- `phone:="408-555-1212";`

  The phone number you dial to connect to your pager service.

- `pin:="123456";`

  The alpha numeric pager’s PIN number, for the type “apager” only.

Examples:

The first example shows a script defined to call an alphanumeric pager named “my_pager” only on Monday and Thursday through Saturday, from 9:00 a.m. to 5:00 p.m. The PIN and the pager service number are specified. Note that the number needed to access an external phone line (9) is included. The second example shows a

script defined to call a numeric pager named “numeric_pager” only on Tuesdays and Wednesdays from 9:00 a.m. to 5:00 p.m. In this example, a PIN is not required.

```
/* Alphanumeric pager notification definition */
notification apager my_pager
{
   days:="monday,thursday-saturday";
   times:="9am-5pm";
   pin:="123456";
   phone:="9,408-555-1212";
}
.
.
.
// Send an alphanumeric pager notification
send(my_pager,
  $CurrentTrapSource,":",severity_level,"
",$CurrentTrapMajor,".",$CurrentTrapMinor);


/* Numeric pager notification definition */
notification npager numeric_pager
{
   days:="tuesday-wednesday";
   times:="9am-5pm";
   phone:="9,555-555-5555";
}
.
.
.
//Send a numeric pager notification
send(numeric_pager,"5554321"); /* 2nd parameter is the telephone
number that the person who is paged should call */
```

E-mail

You can write a message that the application sends to a specified list of recipients. The application uses Simple Mail Transfer Protocol (SMTP) to send the message. To make this notification type work correctly, you must have an SMTP-capable host connected and accessible to the OTM PC. You must configure the host in OTM before activating this feature. Each *send* statement is treated as a separate e-mail message.

E-mail messages coming from Alarm Notification are sent with “OTM” as the sender. The receiving e-mail program may try to match OTM with a corresponding local user account and display the closest match in the e-mail’s header. Although the header information may not be accurate due to mismatches between the term “OTM” and the

local user account information, the e-mail message still appears as defined by the notification.

Mandatory parameters are:

- `from:="OTM";`

  The sender's valid e-mail address.

- `address:="support@tech.com";`

  The recipient's valid e-mail address.

- `server:="192.9.200.1";`

  IP address or host name of SMTP mail server.

Example:

```
// define an email notification
   notification email my_email {
from:="OTM";
address:="joe@acme.com";
      server:="192.9.200.1";
}
.
.
.
// send an email message
send (my_email,
  $DeviceTime,":Device ",$CurrentTrapSource,
  " generated a ",$CurrentTrapMajor,".",$CurretTrapMinor,
  " trap with severity level: ",severity_level,",
ErrorCode:",$ErrorCode,".");
```

The preceding example defines an e-mail notification named "my_email," which has an associated recipient address and the mail server IP address. This script sends e-mail to the address stating the source of the alarm, the severity level, and the alarm error code. Note the use of the named e-mail notification "my_email" with the send syntax in the script.

Text (over modem)

The text notification type allows you to write a message that the application sends to a remote modem. The application connects to the remote modem, usually a remote support site that you have defined, and transmits the message. Be sure that you have a modem and a valid phone line connection.

If the remote modem is busy, the application stores and notes the message for a later delivery or sends it to another specified alternate destination.

Mandatory parameters are:

- `phone:="408-555-4321";`

  The phone number you dial to connect to the remote modem.

Example:

```
//define text over modem notification
   notification modem tech_center   {
   phone:="9,555-4321";
  }
.
.
.
//send text over modem notification
send(tech_center,$CurrentTrapSource,"-MPK
alarm:",$CurrentAlarmErrorCode);
```

The preceding example defines a modem notification named “tech_center,” which has an associated number to dial to connect to the remote modem. This script sends text to the dialed remote modem stating the source of the alarm and the alarm error code. Note the use of the named modem notification tech_center with the send syntax in the script.

SNMP

You can request that the OTM PC generate Simple Network Management Protocol (SNMP) traps. You define SNMP Object Identifiers (OIDs) as parameters in the `send` syntax. Specify a list of TCP/IP addresses or registered host names on the Ethernet network to receive the trap; however, receipt is not guaranteed once messages are transmitted. You must be familiar with and knowledgeable about SNMP to effectively utilize this notification type.

Mandatory parameters are:

- `address:="192.9.200.1";`

  IP address or hostname of the destination for the trap.

- `trap:="6.10";`

  Trap type in Major type.Trap number format.

This is usually done to forward traps to higher-level network management systems such as Optivity NMS and HP OpenView.

For Optivity NMS, the Major type.Trap number format also indicates the severity level as shown in Table 40.

Table 40
Optivity NMS severity levels

Major type.Trap number	Severity level
6.1	Critical
6.2	Major
6.3	Minor
6.4	Warning
6.5	Info
6.6	Clear

Example : In this example, control_center is defined as an SNMP notification.

```
// define an SNMP notification
   notification snmp control_center {
      address:="192.9.200.1";
      trap:="6.1";
   }
.
.
.
// send an SNMP notification to the control center with the same
trap
//format as the M1
send(control_center,
    "1.3.6.1.4.1.562.50.1.2.1.0","Integer",$AlarmSeqNum, //
AlarmSeqNo
    "1.3.6.1.4.1.562.50.1.2.2.0","OctetString",$DeviceTime, //
Date&Time
    "1.3.6.1.4.1.562.50.1.2.3.0","Integer",$NormalizedSeverity,//
Severity
    "1.3.6.1.4.1.562.50.1.2.4.0","Integer",nsOtm,     //Name Space
    "1.3.6.1.4.1.562.50.1.2.5.0","OctetString",$ErrorCode//Error
Code
    "1.3.6.1.4.1.562.50.1.2.6.0","OctetString",$Site, //Site
    "1.3.6.1.4.1.562.50.1.2.7.0","OctetString",$ComponentAddress,//
System
    "1.3.6.1.4.1.562.50.1.2.8.0","OctetString",$SystemComponent,//
System Component
    "1.3.6.1.4.1.562.50.1.2.9.0","OctetString",$CurrentTrapSource,/
/Originating Agent
    "1.3.6.1.4.1.562.50.1.2.10.0","Integer",$TrapType,//Trap Type
    "1.3.6.1.4.1.562.50.1.2.11.0","OctetString",$AssocUser,//
Associated User
    "1.3.6.1.4.1.562.50.1.2.12.0","OctetString" $OperatorData,//
Problem Isolation Data1
    "1.3.6.1.4.1.562.50.1.2.13.0","OctetString" $ExpertData,//
Problem Isolation Data2
    "1.3.6.1.4.1.562.50.1.2.14.0","OctetString" $Text//Problem
Isolation Data3
)
```

The preceding notification should be framed as shown and include all OIDs; otherwise, the management station may not properly receive the notification. The third parameter, variable name, is different for each device. For example, ITG has the variable names for component address, text, and expert data set as “na.” Sample trap formats for all supported devices are included in “Sample Alarm Notification script file” on page -894 of "Script file summary".”

The script identifies the value of each variable in the generated trap, whether an integer or an octet string.

Log file

The log file notification type writes a message that the application saves to a text file. You specify the storage location of this text file in the script. If no path name is specified, the file is saved in the same directory as the Alarm Notification application. If the file already exists, the new message is appended to the existing file. If the file does not exist, it is created.

Mandatory parameters are:

- `filename:=”c:\Normat\sample_log”;`

  Full path name and filename.

Example:

```
// define a file notification
notification file sample_file {
filename  :=  "c:\eventlog.txt";
}
.
.
.
// send a file notification
send(sample_file, “M1 alarm: “,
 $CurrentTrapSource," - " , // Name of this M1
 $CurrentAlarmErrorCode," - " ,      // M1 error code (i.e.,
BUG1234)
 $CurrentAlarmTime," - " ,           // Timestamp from M1
 $CurrentAlarmDescriptiveText," - ", // Text with error message
 $CurrentAlarmOperatorData);         // More text with error
message
```

The preceding script defines a log file notification named *sample_file* having an associated path name defining a storage location on the drive C. The stored file is named *eventlog.txt*. Note the use of the named file notification s*ample_file* with the send syntax in the script.

Rules

Rules allow you to define actions that may be applied to a given event. Rules may only be defined in scripts. By default, rules are examined in a top-down manner. You may use an infer statement to explicitly specify the order in which rules are examined.

A *rule* consists of an if statement containing a logical expression, followed by an instruction. A rule may also include an else statement, which is only executed if the logical expression in the if statement is false. Within a rule, a send statement or a function may be called. New variables may not be defined within the scope of a rule.

Example:

```
            rule check_Meridian1_critical {
               if($CurrentTrapDevice="Meridian1" and
$NormalizedSeverity=Critical) {
                  // print event to console
                  send( con,
                     "--> Critical Meridian1 alarm received! ",
                     $ErrorCode," - " ,                    // M1 error code
                     $CurrentPCTime, " - ",                // Time that PC
received the alarm
                     $CurrentTrapSource," - " ,            // Name of this M1
                     $DeviceTime," - " ,                   // Timestamp from M1
                     $Text," - ",                          // Text with error
message
                     $OperatorData                      // More text with error
message
                  );
               }
               else{
                  // append event to log file
                  send(sample_file,"--> Critical alarm received! ",
                     $ErrorCode," - " ,                    // Error code
                     $CurrentPCTime, " - ",                // Time that PC
received the alarm
                     $CurrentTrapSource," - " ,           // Name of this device
                     $DeviceTime," - " ,                   // Timestamp
                     $Text," - ",                          // Text with error
message
                     $OperatorData                      // More text with error
message
                  );
               }
            }
```

The preceding script defines the rule *check_Meridian1_critical*, which sends critical Meridian 1 alarms to the console and appends other events to the log file *sample_file*.

While rules may invoke functions, the *infer* command allows functions to call rules. Rules may be invoked in any order and repeatedly until a logical expression is satisfied or while a rule has not been triggered.

Examples:

infer{*Rule1*, *Rule2*, *Rule3*} until *Rule4;*

or

infer{*RuleA*, *RuleB*, *RuleC*} while (*c*>5);

Comments

Comments provide a convenient way of adding informational notes within a script. To include comments within a script, use the *C* convention (begin with /* and end with */), or use the *C++* convention (begin the comment with //).

For example:

```
/* This is a comment. */

// This is another comment.
```

Many of the scripts presented in this chapter have portions noted as comments. Remove the comment tags for the application to interpret these as actual scripting code.

Functions

Functions contain a combination of logical expressions and optional variable declarations. They accept parameters and return a single result. You may invoke functions either within logical expressions or rules, or within themselves. Within a function, assignments may occur along with *if* and *loop* statements.

Example:

```
function counter samplefile(counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);// Calling
another function
      n:=n+1;
      if (n=1) {
         send(nf_samplefile,
                        $DeviceTime,": Device ",$CurrentTrapSource,
                        " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                        " trap with severity level: ",severity_level,",
ErrorCode: ", $ErrorCode, ".");
          n:=0;
       }
                    return(n);
}
rule r_samplerul {
      if ($CurrentTrapDevice="ITG")
                     {
           count_samplefile:=samplefile(count_samplefile);
                     }
}
```

Using the sample script files

You have two methods available for writing scripts. You may have a single script in the script file and define all of the rules and functions in this one script, or you may have multiple scripts in the script file and define rules and functions for each script.

Single script

An example of a script file that contains a single script is *sample_wizard_script.txt* included with your OTM software. A printout of this script appears in “Sample Alarm Wizard script file” on page -931 of "Script file summary".” In this example, there is only one script titled “GeneratedScript.” This script has multiple rules to check for a condition and perform a defined task when the condition occurs. Typically, if the rule is satisfied, the script calls a function that initiates an action. The notifications can be located outside the script, and the function can call the notification from inside the script.

The file *sample_wizard_script.txt* is a file that has been generated by the Alarm Script Wizard. You can modify this file manually; however, you cannot open it using the Alarm Script Wizard once it has been modified. See “Alarm Script Wizard” on page 624.

Multiple scripts

An example of a script file that contains multiple scripts is *sample_an_script.txt*, which is also included with your OTM software. A printout of this script appears in “Sample Alarm Notification script file” on page -894 of "Script file summary".” If you are using this method, you define a separate script for each activity. For example, you define a script for all e-mail notifications, a second script for all console notifications, and a third script for all pager notifications. Each script can have multiple rules and functions.

Nortel recommends that you save a copy the file *sample_an_script.txt* under a new name (for example *notify.txt*), and modify the copy of the file to create your scripts.

A portion of the sample Alarm Notification script file *sample_an_script.txt* follows. You should add your scripts after the following sections of the file:

```
//
*************************************************************************
*******
// Map severities from the various traps that OTM receives into a standard
severity list.
//
*************************************************************************
*******

counter $NormalizedSeverity := 0;

counter Undetermined              := 0;
counter Critical                  := 1;
counter Major                     := 2;
counter Minor                     := 3;
counter Warning                   := 4;
counter Info                      := 5;
counter Cleared                   := 6;
counter Unknown                   := 7;

// ===================================================================
//                           Map OTM severities
// ===================================================================
//
1->Critical;2->Major;3->Minor;4->Info;5->Info;6->Cleared;7->Unknown;x->Undetermi
ned

script AssignOTMSeverities when ( $CurrentTrapDevice = "OTM" ) {
                 function assignit() {
                    if ($Severity=Critical) {
                       $NormalizedSeverity:=Critical;
                    }else{ if ($Severity=Major) {
                       $NormalizedSeverity:=Major;
                    }else{ if ($Severity=Minor) {
                       $NormalizedSeverity:=Minor;
                    }else{ if ($Severity=Info) {
                       $NormalizedSeverity:=Info;
                    }else{ if ($Severity=Unknown) {
                       $NormalizedSeverity:=Unknown;
                    }else{ if ($Severity=Warning) {
                       $NormalizedSeverity:=Warning;
                    }else{ if ($Severity=Cleared){
                       $NormalizedSeverity:=Cleared;
                    }else{
                       $NormalizedSeverity:=Undetermined;
```

```
                    }}}}}}}
                }
                rule assign_severity {
                    if ($CurrentTrapDevice="OTM") {
                        assignit();
                    }
                }
}

// ==========================================================================
//                  Map severities from Meridian1 and Call Server Open Alarms
// ==========================================================================
//
1->Minor;2->Major;3->Critical;4->Unknown;5->Warning;6->Clear;7->Undetermined;x->
Info

script convertM1Severities when ( $CurrentTrapDevice = "Meridian1" or
    $CurrentTrapDevice ="CALL_SERVER") {
                function convertit() {
                    if ($Severity=1){
                        $NormalizedSeverity:=Minor;
                    }else{ if ($Severity=2){
                        $NormalizedSeverity:=Major;
                    }else{ if ($Severity=3){
                        $NormalizedSeverity:=Critical;
                    }else{ if ($Severity=4){
                        $NormalizedSeverity:=Unknown;
                    }else{ if ($Severity=5){
                        $NormalizedSeverity:=Warning;
                    }else{ if ($Severity=6){
                        $NormalizedSeverity:=Cleared;
                    }else{ if ($Severity=7){
                        $NormalizedSeverity:=Undetermined;
                    }else{
                        $NormalizedSeverity:=Info;
                    }}}}}}}
                }
                rule severity_conversion {
                    if ( $CurrentTrapDevice = "Meridian1" or $CurrentTrapDevice
= "CALL_SERVER"){
                        convertit();
                    }
                }
}
```

```
// ==========================================================================
//               Map severities from devices other than OTM, Meridian1, and Call
Server
// ==========================================================================
//1->Critical;2->Major;3->Minor;4->(CallPilot::Info, Warning);
//5->(CallPilot::Unknown, Cleared);x->Undetermined

script convertSeverities when ($CurrentTrapDevice!="OTM" and
$CurrentTrapDevice!="Meridian1"
                                    and $CurrentTrapDevice!="CALL_SERVER") {

                function convertit() {
                   if ($Severity=1) {
                      $NormalizedSeverity:=Critical;
                   }else{ if ($Severity=2){
                      $NormalizedSeverity:=Major;
                   }else{ if ($Severity=3){
                      $NormalizedSeverity:=Minor;
                   }else{ if ($Severity=4){
                      if ($CurrentTrapDevice="CALL_PILOT"){
                         $NormalizedSeverity:=Info;
                      }else{
                         $NormalizedSeverity:=Warning;
                      }
                   }else{ if ($Severity=5){
                      if ($CurrentTrapDevice="CALL_PILOT"){
                         $NormalizedSeverity:=Unknown;
                      }else{
                         $NormalizedSeverity:=Cleared;
                      }
                   }else{
                      $NormalizedSeverity:=Undetermined;
                   }}}}}
                }

                rule severity_conversion {
                   if ($CurrentTrapDevice!="OTM" and
$CurrentTrapDevice!="Meridian1"
                            and $CurrentTrapDevice!="CALL_SERVER") {
                               convertit();
                   }
                }
             }


//
**************************************************************************
*******
```

```
//                                  Assign $NameSpace
//
*****************************************************************************
*******

counter nsOtm               := 1; // Originated from an OTM
counter nsMeridian1         := 2;
counter nsCallPilot              := 3;
counter nsMeridianMail      := 4;
counter nsSl100             := 5;
counter nsPassport          := 6;
counter nsItg               := 7;
counter nsBravo             := 8;
counter nsIss7              := 9;
counter nsMDECT                  := 10;
counter nsCallServer             := 11;
counter nsMediaCard              := 12;
counter nsSigServer              := 13;
counter nsSccs              := 14;
counter nsMeridianMailLink  := 15;
counter nsGenericOrUnknown  := 16;


script assignNameSpace {

                function ns() {
                   if ($CurrentTrapDevice="OTM") {
                      // Original $CurrentTrapDevice is retained
                   }else{ if ( $CurrentTrapDevice = "Meridian1" ) {
                      $NameSpace := nsMeridian1;
                   }else{ if ( $CurrentTrapDevice = "CALL_PILOT" ) {
                      $NameSpace := nsCallPilot;
                   }else{ if ( $CurrentTrapDevice = "MMCS" ) {
                      $NameSpace := nsMeridianMail;
                   }else{ if ( $CurrentTrapDevice = "ITG"
                          or $CurrentTrapDevice = "ITG_ISDN_TRK"
                          or $CurrentTrapDevice = "ITG_IP_LINE"
                          or $CurrentTrapDevice = "ITG_IP_PHONE" )
                   {
                          $NameSpace := nsItg;
                   }else{ if ( $CurrentTrapDevice = "BRAVO" ) {
                      $NameSpace := nsBravo;
                   }else{ if ( $CurrentTrapDevice = "ISS7" ) {
                      $NameSpace := nsIss7;
                   }else{ if ( $CurrentTrapDevice = "MDECT" ) {
                      $NameSpace := nsMdect;
                   }else{ if ( $CurrentTrapDevice = "SCCS" ) {
                      $NameSpace := nsSccs;
```

```
                    }else{ if ( $CurrentTrapDevice = "CALL_SERVER" ) {
                        $NameSpace := nsCallServer;
                    }else{ if ( $CurrentTrapDevice = "MEDIA_CARD" ) {
                        $NameSpace := nsMediaCard;
                    }else{ if ( $CurrentTrapDevice = "SIGNALLING_SERVER" ) {
                        $NameSpace := nsSigServer;
                    }else{
                        $NameSpace := nsGenericOrUnknown;
                    }}}}}}}}}}}}
                }

                rule ns1 {
                    if (1) {
                        ns();
                    }
                }
}
```

Alarm Script Wizard

The Alarm Script Wizard is a graphical easy-to-use tool that enables you to define, consult, and edit the notifications sent when OTM receives an alarm message.

The Alarm Script Wizard generates scripts that can be compiled by the Alarm Notification script compiler. The Script Wizard is not able to open scripts that are not generated by it. If you edit a generated script file, the script is no longer understood by Script Wizard.

Use the Alarm Script Wizard to create basic script files. To define more elaborate notification rules, see "Scripting" on page 594.

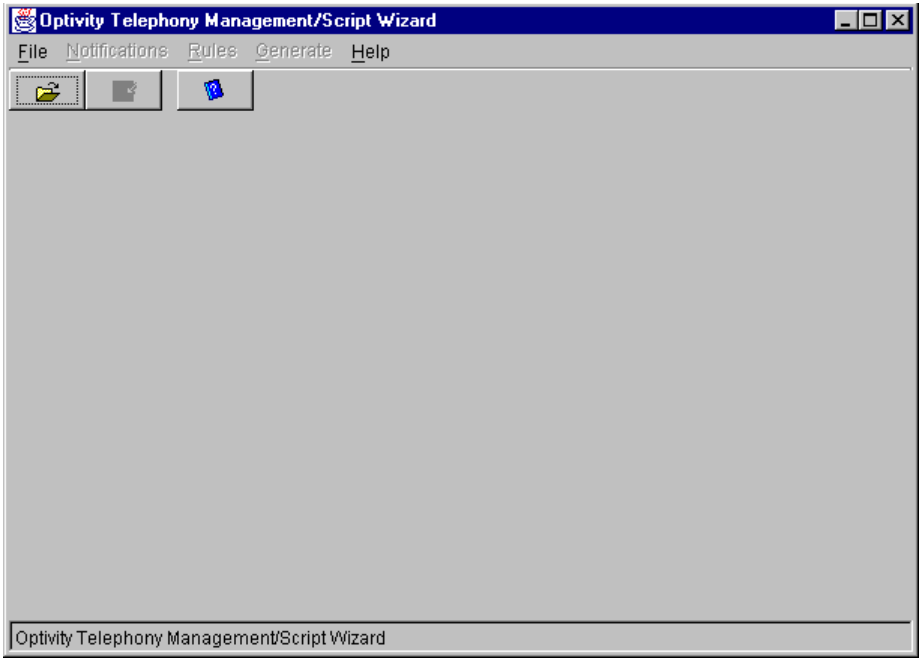
Starting the Alarm Script Wizard

Procedure 118
Starting the Alarm Script Wizard

1 From the Windows Start Menu, select **Programs > Optivity Telephony Manager > Alarm Script Wizard**.

The Alarm Script Wizard window opens (Figure 290).

Figure 290
Alarm Script Wizard.

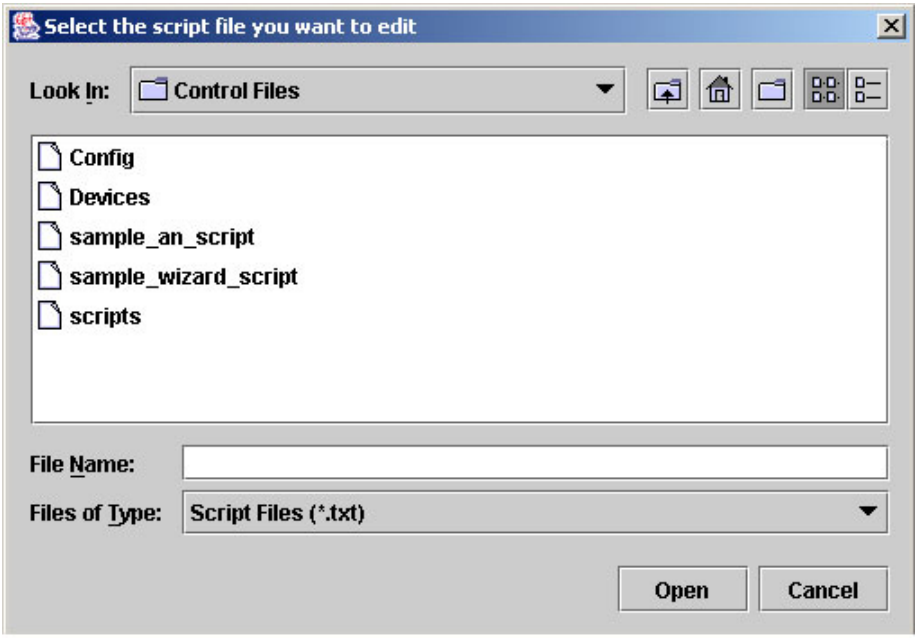

Optivity Telephony Management/Script Wizard
File Notifications Rules Generate Help
Optivity Telephony Management/Script Wizard

2 To open a script file, do one of the following:

- Select **File > Open**
- On the toolbar, click **Open**.

The Select script file window opens (Figure 291).

Figure 291
Select the script file you want to edit dialog box



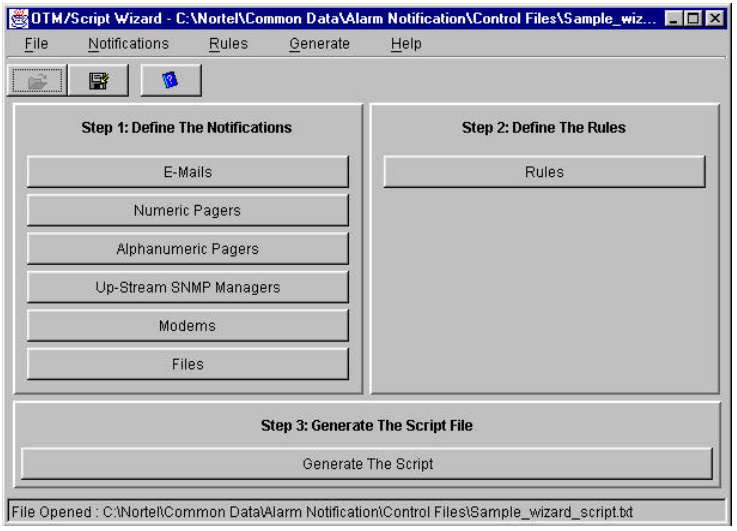
3 Select the appropriate filename.

4 Click **Open**.

The script file is loaded into the Script Wizard.

When the existing script is loaded or a new script is created, the main Script Wizard screen opens (Figure 292).

Figure 292
Main Script Wizard window



End of Procedure

To view information about the menus, toolbar, buttons, and other functions available in the Script Wizard window, use online Help.

The three major parts of the main Script Wizard window are identified as:

- Step 1: Define The Notifications
- Step 2: Define The Rules
- Step 3: Generate The Script File

In Step 1, you select the type of notification that you want to generate. See "Defining the notifications"" next for information on completing Step 1.

In Step 2, you defines the rules that determine when a notification is to be sent. See “Defining the rules” on page 629.

The final step is to generate the script. See “Generating the script file” on page 633.

Defining the notifications

A list of available notification types is shown in the Main Script Wizard window. There are six available notification types:

- E-Mails (SMS)
- Numeric Pagers
- Alphanumeric Pagers
- Up-Stream SNMP Managers

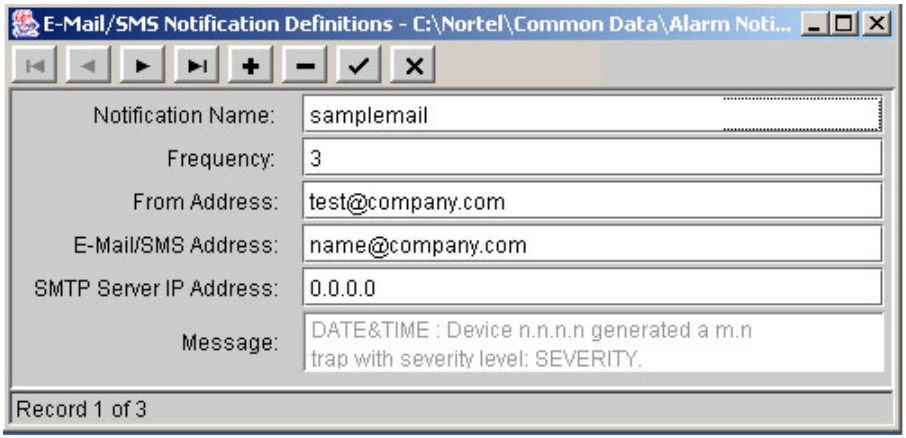
  When defining notifications to "Up-stream SNMP Managers", the major trap number and minor trap number are requested. The major trap number corresponds to the Enterprise branch of the SNMP OID tree, and is always "6". The minor trap number corresponds to alarm severity values defined in the OTM Open Alarm MIB, and not those of the source devices. The following values should be used for the minor trap number:

  - 1 - critical
  - 2 - major
  - 3 - minor
  - 4 - warning
  - 5 - info
  - 6 - clear

- Modems
- Files

Click on one of the notification types to open the corresponding definitions window. You use the definition window to edit notification parameters. Figure 293 shows the E-Mail Notification Definition window.

Figure 293
E-Mail Notification Definitions window



To view information about the menus, toolbar, buttons, and other functions available in the Definition windows, use online Help.

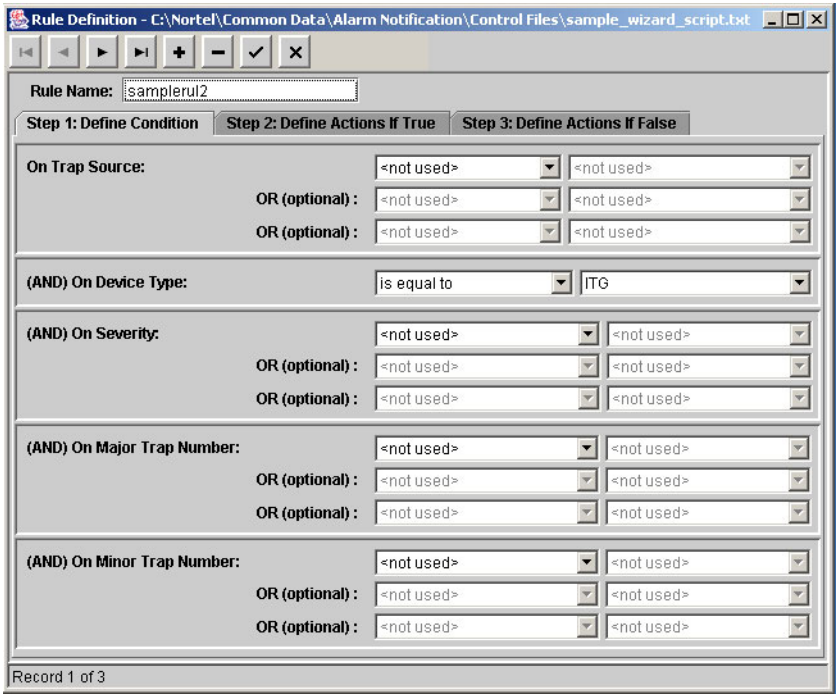
A Frequency is associated with each notification. The number entered in the Frequency field indicates the number of times the notification is called by the program before the action is actually executed. In the example shown in Figure 293, the E-Mail will be sent after the third occurrence of the notification.

Defining the rules

Rules allow you to define actions that will be applied to a given event or condition. Each rule is defined by a unique Rule Name. You can add, remove, and edit a rule. Rule definition is divided into three sections. The first section, Define Condition, is shown in Figure 294. This section defines a test to be applied to each alarm processed by the application. A condition is composed of five segments or sub-conditions.

To view information about the menus, toolbar, buttons, and other functions available in the Define Condition window, use online Help.

Figure 294
Define Condition window



OTM Alarm Notification takes the incoming severities from devices and will map them to severities defined in the OTM MIB. The "On Severity" section refers to the mapped severity. So, for example, if "Critical" is chosen, with no other conditions specified, then alarms from all devices that are of "Critical" severity will be selected by the rule.

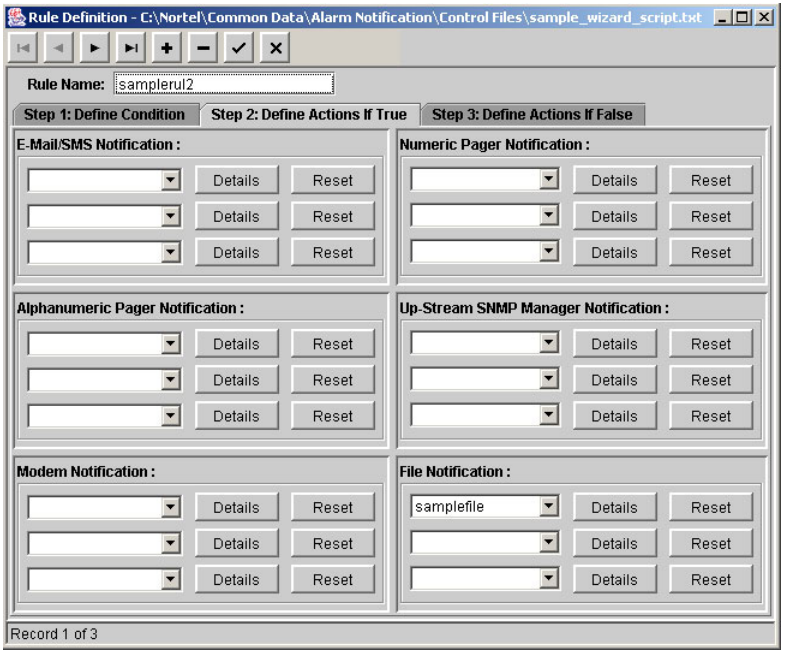
The "On Major Trap Number" and "On Minor Trap Number" refer to the incoming trap numbers from devices. The major trap number would normally correspond to the Enterprise branch of the SNMP OID tree, and the value for that is "6", denoting traps defined just for that device. The minor trap number would be that defined in the MIB for the device. For example, Call Server traps always have a single minor trap number of "10", whereas a Signaling Server minor trap varies by severity (e.g., Critical = "1", Major = "2"). When selecting the Major and Minor trap number options, a specific device should be indicated as well. It is preferred to use the "On Severity" option when dealing with Communication Server 1000 and Meridian 1 devices since the Alarm Script Wizard will do the appropriate selection of the alarms and knowledge of device trap numbers is unnecessary.

The second section, Define Actions If True, describes the actions to be taken if the condition defined in the first section is true. This section is shown in Figure 295. The

action should be a reference to an already defined notification (Figure 293). A minimum of one action is required. You may enter up to 3 actions for each type of notification for a total of 18 actions.

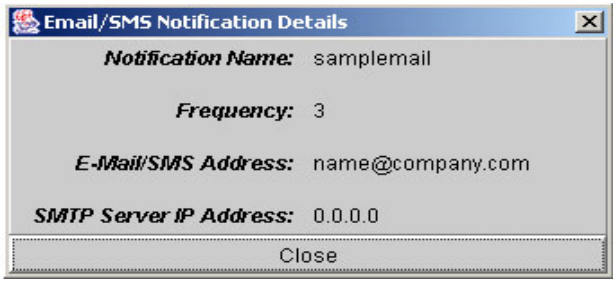
To view information about the menus, toolbar, buttons, and other functions available in the Define Actions If True window, use online Help.

Figure 295
Define Actions If True window



Click Details to display the notification definition (Figure 296).

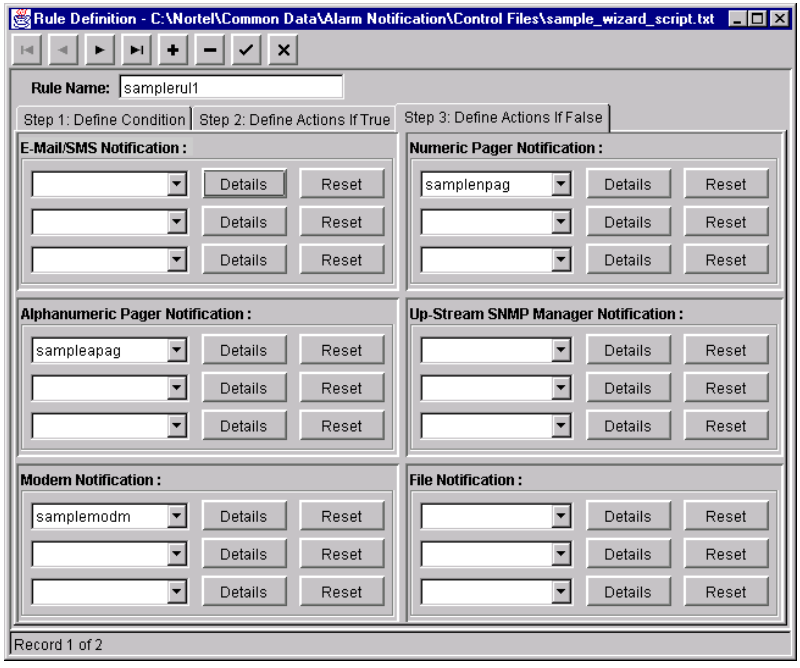
Figure 296
Email notification details



The third section, Define Actions If False, describes the actions to be taken if the condition defined in the first section is false. This section is shown in Figure 297. You are not required to enter any information in this section, but you may enter up to three actions for each type of notification.

To view information about the menus, toolbar, buttons, and other functions available in the Define Actions If False window, use online Help.

Figure 297
Define Actions If False window



Generating the script file

The final step in the Script Wizard is to generate the script file. In the Main Script Wizard window (Figure 292 on page 627), click **Generate The Script** button.

A script file is generated using the conditions, actions, and notifications that you entered.

Sample alarm notification scripts

This section shows portions of a sample script to illustrate scripting syntax that performs common alarm notification tasks.

Log file

This script uses the file notification and saves all events to the filename “sample_log.txt” in the defined location.

Windows “long” file names are allowed in the scripts but are truncated when the system saves the file. Keep your file names to the standard 8-character length.

```
notification file sample_file {
   filename:="c:\sample_log.txt";
}
```

Numeric pager

This script uses the npager notification. Customize this script by typing in your numeric pager number:

```
notification npager sample_numeric_pager {
   phone:="9,555-1212";
}
```

Alphanumeric pager

This script uses the apager notification. Customize this script by typing in your alphanumeric pager number and Personal Identification Number (PIN).

```
notification apager sample_alpha_pager {
   phone:="9,555-1212";
   pin:="101565";
}
```

Severity code descriptions

This following script examines error codes generated by the Meridian 1 system and assigns descriptive text to them. This portion of the script uses the counter data type and the send alarm notification to send alarm notifications to a file and a pager. Note the use of rule and send syntax. Note the $Current... references to configuration file entries. See the examples on page 591.

```
/* Provide variables to map M1 severity values into words */
counter info:=0,minor:=1,major:=2,critical:=3,debug:=4;
script SampleScript {
counter bug3456:=0;

/* This rule looks for critical M1 events */
rule check_critical {
    if ($CurrentTrapDevice="Meridian1" and
    $CurrentAlarmSeverity=critical)
```

The *if* statement ensures that only critical alarms from the Meridian 1 system are processed.

```
{
 /* print event to console */
send(con,"M1 alarm: ",
    $CurrentTrapSource," - " ,  // Name of this M1
    $CurrentAlarmErrorCode," - " , // M1 error code (i.e., BUG1234)
    $CurrentAlarmTime," - " ,   // Timestamp from M1
    $CurrentAlarmDescriptiveText," - ",    // Text with error
    message
    $CurrentAlarmOperatorData);// More text with error message
```

The script displays information about the Meridian 1 system alarm in the console pane, including the system where the alarm originated, the error code of the alarm, the time of the alarm, any descriptive text associated with the alarm, and other text associated with the error alarm.

```
/* append event to log file */
send(sample_file,"M1 alarm: ",
    $CurrentTrapSource," - " ,  // Name of this M1
    $CurrentAlarmErrorCode," - " ,      // M1 error code (i.e.,
BUG1234)
    $CurrentAlarmTime," - " ,           // Timestamp from M1
    $CurrentAlarmDescriptiveText," - ", // Text with error message
    $CurrentAlarmOperatorData);         // More text with error
message
```

The script saves to a named file on disk the same information about the system alarm displayed on the console.

```
            /* optionally send message to alpha pager */

send(sample_alpha_pager,$CurrentTrapSource,":",$CurrentAlarmCode,"!");
            */
                }
            }
```

The send command contacts the pager named as sample_alpha_pager with the error information “M1 : BUG1234” where M1 is the system name and BUG1234 is the error type.

Specific system events

This script examines error codes generated by a system for a specific event code and counts the number of occurrences for this event. For this example, BUG3456 is the specific event code. This portion of the script displays to the console the time when the error occurred. Customize this script by typing in your error code. This script may be of use if you are trying to troubleshoot the system for a specific problem.

This rule is named check_specific_event and examines events from the device named Meridian 1 for error code BUG3456. If this event is detected, the console displays “Found BUG3456 at <alarm time>” where <alarm time> is the timestamp provided by the system.

This script uses the `rule` syntax.

```
rule check_specific_event {
      if ($CurrentTrapDevice="Meridian1" and
$CurrentAlarmErrorCode="BUG3456")
         {
         send(con,bug3456,")
Found ",$CurrentAlarmErrorCode," at ",$CurrentAlarmTime);
         bug3456:=bug3456+1;
         }
   }
```

Combining scripts

Several scripts are often found in a single script file. The sample scripts in this section are combined into a single text file named *Script.txt* included with the application. See “Sample Alarm Notification script file” on page 894. Note the use of comments to document the various portions of the script.

Scripting notes

The scripting language available with Alarm Notification allows tremendous flexibility and functionality in defining how the application processes events from connected systems. You can use any text editor, such as Notepad, to write your script. Use the Control Files tab in the Alarm Notification Run Options dialog box to specify the script and other control files you will use.

Customized scripts are interpreted by the Alarm Notification application. Errors in the script are noted and related error messages appear in the console pane in the Alarm Notification window. Scripting error messages include the line number where the error occurred, as counted from the top of the text file, as well as a short error description.

Maintenance applications

This chapter provides you with an introduction to the OTM Maintenance Windows application as well as an overview of its major functions.

This section describes functions that are common to all of the Maintenance Windows applications. Read this section thoroughly to help you use these applications efficiently.

Subsequent sections focus on the eight hardware-related windows. A section is included on the Inventory Reporting application, which is based on LD 117. For information on the web interface to maintenance applications, see "Web Maintenance Pages" on page 762.

Help

This chapter does not discuss each Maintenance Windows function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Maintenance Windows function, use the online Help function. You can use the Help function to obtain help for topics either directly or through its index and word-search functions. While running Maintenance Windows, you can obtain context-sensitive Help on any topic you require by simply clicking Help from a specific dialog box or window.

To obtain help for a topic, click Help from the currently selected dialog box or window. This accesses the Windows Help function and displays context-sensitive Help information on the current topic.

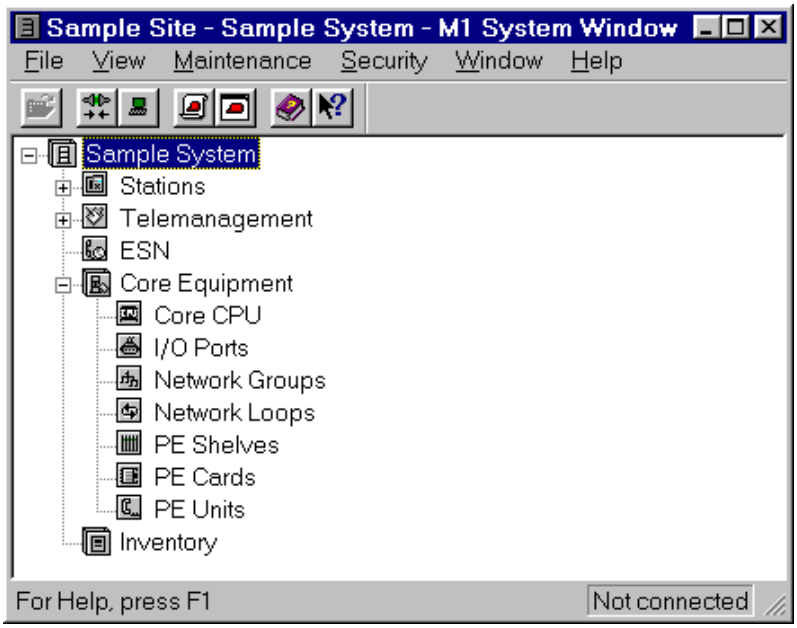
Once you access Help, scroll through the other Maintenance Windows Help topics to search for a specific topic, or print the Help information.

To view a list of Help topics for Maintenance Windows, click Contents from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

Launching a Maintenance Windows application

You launch Maintenance Windows applications from the OTM System window. Figure 298 shows the OTM System window.

Figure 298
OTM System window

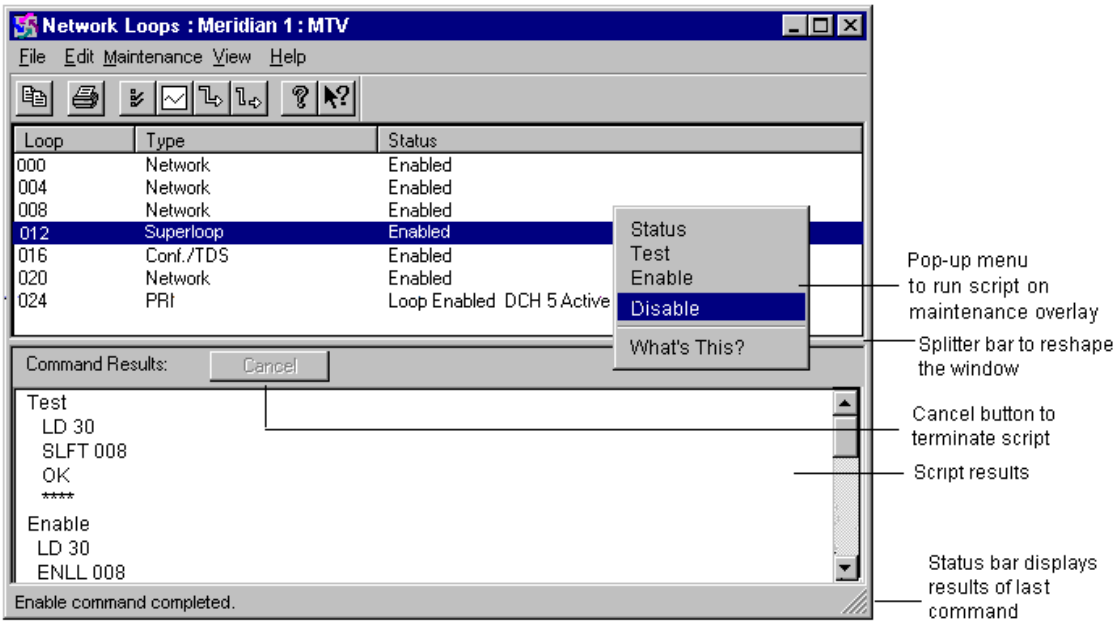


Under Core Equipment, double-click the icon for the desired Maintenance Windows application to launch that application. The appropriate window appears.

Each application is described in detail in a separate chapter in this document.

For example, double-click the Network Loops icon to open the Network Loops window (Figure 299). Each loop is listed, along with descriptive information. From this window, you can sort this information, select a loop and run maintenance commands, and get Help on the selected loop.

Figure 299
Network Loops window



Maintenance Windows applications

OTM Maintenance Windows includes the following applications:

Core CPU

The CPU window displays the status of cards in both CPU shelves on the selected Meridian 1 system, or the Call Server on the selected Communication Server 1000 system. You can perform actions and tasks on cards in the Meridian 1 system's CPU shelf or the Communication Server 1000 system's Call Server from the CPU window.

I/O Ports

The I/O (Input/Output) Ports window displays the status of all I/O ports on the systems, and allows you to execute actions and tasks on a selected port.

Network Groups

The Network Groups window displays the status of all Network Group Cards on the Meridian 1 system, and allows you to execute actions and tasks on a selected card.

Network Loops

The Network Loops window lists all the network loops on the Meridian 1 system. It allows you to execute actions and tasks on a selected loop by choosing commands from the Maintenance menu.

PE Shelves

The PE Shelves window displays the status of the Peripheral Controller Cards for each PE Shelf on a Meridian 1 system, and allows you to execute actions and tasks on a selected card.

PE Cards

The PE Cards window displays the status of all EPE and IPE Peripheral Equipment cards for each PE Shelf on a Meridian 1, and allows you to execute actions and tasks on a selected card. The PE Cards window is also used to display the status of the circuit cards associated with each of the Media Gateways on a Communication Server 1000 system.

PE Units

The PE Units window displays information for all PE units and Directory Numbers on the system, and allows you to execute actions and tasks on a selected unit.

B- and D-channels

The PRI/PRI2 B- and D-channels window displays the B- and D-channels on the selected digital trunk (for example, PRI loop), and allows you to execute actions and tasks on a selected channel.

Inventory Reporting

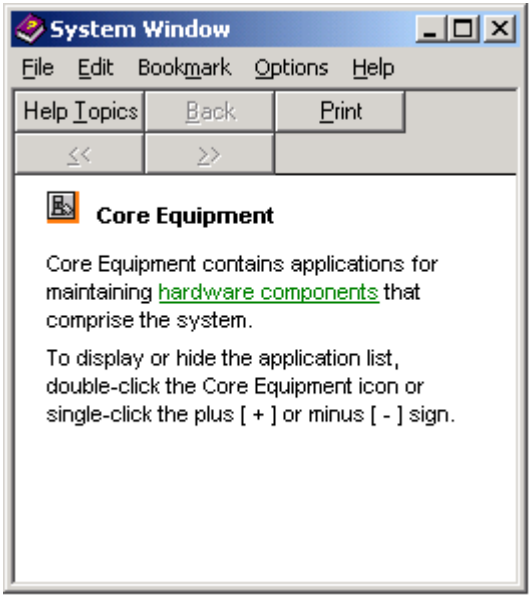
The Inventory Reporting window allows you to generate and download inventory files listing cards and telephone sets installed on a Meridian 1 system.

Full documentation in online Help

Each Maintenance Windows application is fully documented in the online Help. Each menu command, button, and field is documented. Be sure to consult the online Help if you want to get more detail about any of these items.

For Help on an object in a list, select the item and use the right mouse-button to select What's This Help. Descriptive information on the item appears. For example, ask for help on Core Equipment and the window shown in Figure 300 appears.

Figure 300
What's This–Help on Core Equipment


System Window
File Edit Bookmark Options Help
Help Topics
Back
Print
Core Equipment
Core Equipment contains applications for maintaining hardware components that comprise the system.
To display or hide the application list, double-click the Core Equipment icon or single-click the plus [+] or minus [-] sign.

Performing a maintenance task on an item

Procedure 119
Performing a maintenance task on an item

1. Open the appropriate Maintenance Windows application.
2. Select the item from the list.
3. Choose a command from the Maintenance menu, the toolbar, or by using the right mouse-button pop-up window. A confirmation dialog box appears for potentially destructive commands.

4 The script appears in the command result section of the window, followed by the overlay output.

End of Procedure

System connection

Maintenance window applications connect to the system by a Pseudo TTY (PTY). A PTY is a “software only” TTY that uses an I/O port address. PTYs appear in the I/O Ports window. One PTY is used for all Maintenance Windows users connected to the system (even from multiple PCs). One PTY is used for each System Terminal connection, even if it is not logged in to the overlays.

IMPORTANT!

The OTM System Terminal connections (Overlay Passthru, VT220, and Virtual System Terminal) require two PTY ports for successful login. Upon login, the first PTY port disconnects immediately. If only one PTY port is free, a connection cannot be established.

Queueing scripts

If the system is currently processing another user’s script, your command is placed in a queue. You must wait until your script is finished processing before you can choose another Maintenance menu command. However, while you are waiting, you can perform maintenance tasks on another type of system component using a different Maintenance Windows application.

Cancelling scripts

To remove a command from the queue or to cancel a command in progress, click Cancel. Pressing the <Esc> key also removes or cancels a command. If a command is in progress, Cancel aborts the current command and overlay by sending four stars (****).

Refreshing the hardware status in the list

The hardware status in the list is updated as follows:

- The list is updated every few seconds, even if there is no activity on the OTM PC

  You specify the interval on a per-window basis. See the About Maintenance Windows item in the Help menu.

- The selected object status updates at every OTM PC after every script (therefore, if you disable a port from one PC, the status updates on all other PCs).
- The entire list updates after some scripts because multiple objects are affected (for example, Split CPU, Disable MSDL).
- You can manually refresh the hardware status display by pressing <F5>.

Menu commands

Each menu command is fully documented in online Help. The Status Bar provides useful information on the script to run (see "Using the Status Bar" on page 645).

You can also read What's This Help on any menu command. Press <Shift><F1> (or select What's This from the Help menu), and then select the command for full online documentation.

The Maintenance menu is unique for each hardware application, and is also fully documented in online Help. In addition to the information provided in the Status Bar, you can read What's This Help on any menu command as described above.

Getting help on an error message

Sometimes, a maintenance command results in a system error message, such as NWS010.

To get help on the last error message, even if it has scrolled out of view, choose Error Message from the Help menu.

To get help on a previously displayed error message:

- Use the scroll bar to move to the error message. Double-click the error message.

or

- Select the error and choose Error Message from the Help menu.

or

- Press <Ctrl>E for information on the last error message.

Navigating within the maintenance window

You can use the maintenance window in the following ways:

Customizing the window and columns

- Resize the window and columns using standard Microsoft Windows controls.
- Use the horizontal or vertical scroll bars to move around in the alarm display.
- Resize the column by dragging the column divider to make more room for text

  An ellipsis (...) after column text indicates there is more information than will fit in the column.

- Drag the splitter bar (which divides the window into two display areas) to change the sizes of the card list and command results display areas.

Sorting the list

By default, items are listed in an order optimized for that application. You can sort the list according to another column by clicking in that column heading. Click to sort in ascending order (an “up” arrow appears in the heading); click again for descending order (“down” arrow).

For help on the definition of any column in the list, click What’s This in the Help menu, and then click the column title.

Using shortcuts

The application provides convenient keyboard equivalents for many menu selections. You can perform the following common tasks by typing the accelerator keys:

- <Ctrl>+R (Status)—Displays detailed status information for the selected hardware device
- <Ctrl>+T (Test)—Performs predefined tests on the selected hardware device
- <Ctrl>+W (Enable)—Restores the selected hardware device to service
- <Ctrl>+D (Disable)—Removes the selected hardware device from service

Using the Toolbar

The Toolbar gives you quick access to selected commands. Each button is documented in the online Help (Figure 301).

Figure 301
CPU toolbar

Using the Status Bar

To display or hide the Status Bar located at the bottom of the window, use the Status Bar command in the View menu.

The Status Bar describes actions of the menu commands as you use the mouse to navigate through menus. When you select a Maintenance menu item, the status bar displays the following information:

- Type of object selected
- First overlay command in the script

When you run a Maintenance menu command, the Status Bar describes the progress of the command while it executes. For example, the Status Bar shows “Enable command in progress” when you choose an Enable command.

The Status Bar also displays the actions of the Toolbar buttons as you move the pointer over them.

Printing

You can print Maintenance Windows information by selecting the lines to print in the list or the command results area (or the entire section), and selecting Print from the File menu. Select Print to File in the Print dialog box to export the data for use in a spreadsheet or other application.

Supported systems

Maintenance Windows is supported on Communication Server 1000 systems, and on Meridian 1 systems with X11 Release 22 or later with the MAT Management Interface package (296). It also supports the Meridian 1 PBX 11C Chassis beginning with X27 Release 1.

Feature limitations

- Not all hardware maintenance commands are supported. See the tables in each Maintenance Windows application section for the list of supported hardware and commands.
- Only one user can access a maintenance overlay at a time (this is an existing limitation of the overlays). Commands issued from a maintenance window are queued if:
  - A TTY user has loaded a maintenance overlay
  - Another maintenance window (same or different user) is running a script that uses the same maintenance overlay
  - A previous command was issued from a Maintenance window (that is, you must wait until the first command is completed before issuing another)

One Pseudo TTY port is required for Maintenance Windows (regardless of the number of windows and logged-in users). Each instance of the System Terminal window (active or inactive) requires an additional Pseudo TTY port. This is in addition to the PPP/ Ethernet ports required for the basic OTM PC connection.

Maintenance window menus are not context sensitive to the maintenance state of the selected Meridian 1 or Communication Server 1000 object. For example, the enable command is not grayed out if the object is already enabled. You get the same response as entering the enable command in the overlay (usually an error message stating that the card is already enabled).

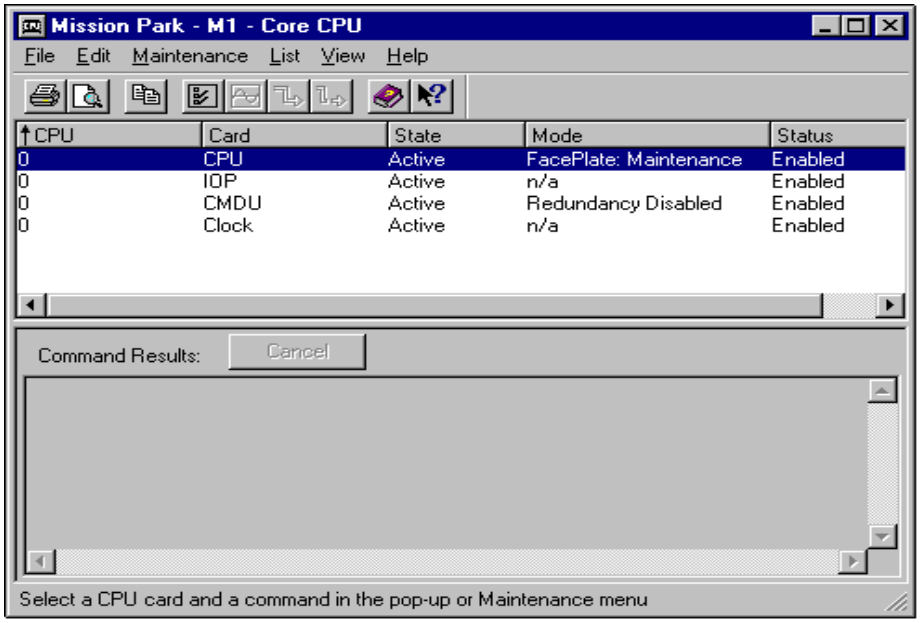
Core CPU window

The Core CPU window displays the status of cards in the CPU shelves on the selected Meridian 1 system or the status of the Call Server in a Communication Server 1000 system.

Launching Core CPU

From the System window, under Core Equipment, double-click Core CPU icon. The Core CPU window displays (Figure 302).

Figure 302
CPU window


Mission Park - M1 - Core CPU
File Edit Maintenance List View Help
CPU Card State Mode Status
0 CPU Active FacePlate: Maintenance Enabled
0 IOP Active n/a Enabled
0 CMDU Active Redundancy Disabled Enabled
0 Clock Active n/a Enabled
Command Results:
Cancel
Select a CPU card and a command in the pop-up or Maintenance menu

The command results area in the lower portion of the window displays the results of Maintenance menu commands.

Core CPU column descriptions

The Core CPU window provides columns of information about each card installed in the shelf. The Core CPU list is initially sorted by CPU number (there may be one or two CPU shelves, depending on the hardware type). Table 41 describes each column.

Table 41
Core CPU window column descriptions

Column	Description
CPU	Shelf number associated with the card.
Card	CPU card type, the following types are listed: • Core Processing Unit (CPU) cards • Core Multi-Disk Unit (CMDU) cards • Input/Output Processor (IOP) cards • Clock Controller (Clock) cards • Fiber cards (Meridian 1 PBX 11C Cabinet only)
State	A card can be in an active or standby state.
Mode	Mode applies only to CPU and CMDU cards: CPU cards may be in split or shadowed mode. The faceplate may be in Normal or Maintenance mode. CMDU cards may be in Redundancy enabled or Redundancy disabled mode.
Status	Current status of the card. For a more detailed status report, use the Status command in the Maintenance menu.

Supported Core CPU commands

Table 42 lists the hardware and Core CPU commands supported. Use System Terminal for hardware or commands not supported by the Core CPU window.

Table 42
Supported Core CPU commands

Hardware	Supported	Commands supported
CP cards	Yes	All, except split and shadow CPU commands
I/O Processor (IOP) cards	Yes	All, except disable IOP and Ethernet commands ***Note*:** You will lose connection to M1.
Core Multi-Disk Units (CMDU)	Yes	All
Clock Controller	Yes	All
Fiber Link (Meridian 1 PBX 11C Cabinet)	Yes	All, including cabinet enable/disable commands
Fiber Link	Yes	All
System Utility (SUTL)	Yes	All

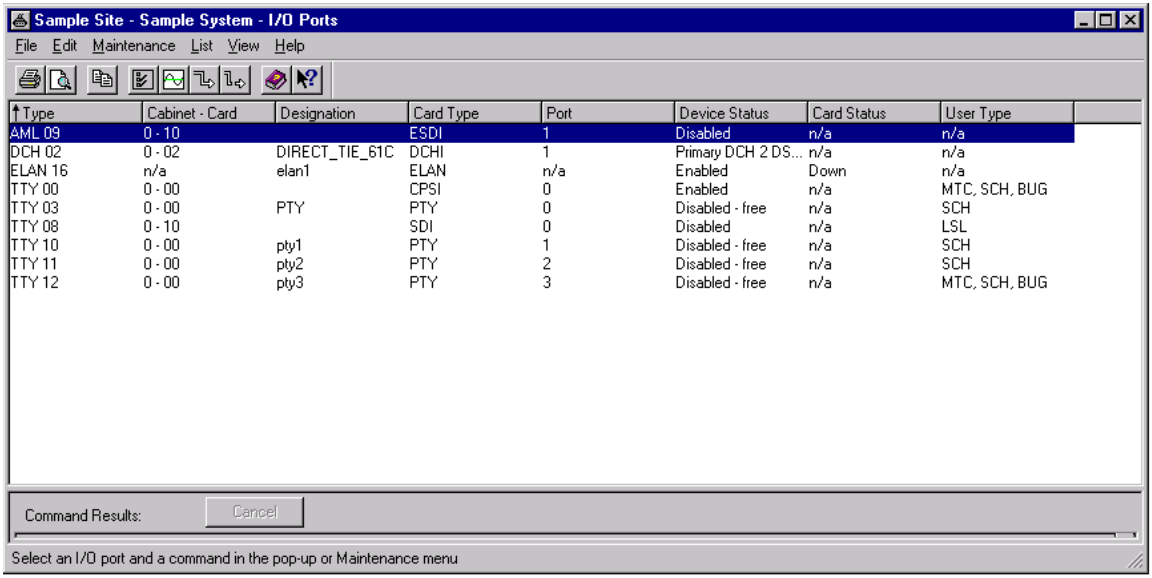
I/O Ports window

The I/O (Input/Output) Ports window displays the status of all I/O ports on the system.

Launching I/O Ports

From the System window, under Core Equipment, double-click the I/O Ports icon. The I/O Ports window appears (Figure 303).

Figure 303
I/O Ports window


Sample Site - Sample System - I/O Ports
File Edit Maintenance List View Help
Type | Cabinet - Card | Designation | Card Type | Port | Device Status | Card Status | User Type
AML 09 | 0 - 10 | | ESDI | 1 | Disabled | n/a | n/a
DCH 02 | 0 - 02 | DIRECT_TIE_61C | DCHI | 1 | Primary DCH 2 DS... | n/a | n/a
ELAN 16 | n/a | elan1 | ELAN | n/a | Enabled | Down | n/a
TTY 00 | 0 - 00 | | CPSI | 0 | Enabled | n/a | MTC, SCH, BUG
TTY 03 | 0 - 00 | PTY | PTY | 0 | Disabled - free | n/a | SCH
TTY 08 | 0 - 10 | | SDI | 0 | Disabled | n/a | LSL
TTY 10 | 0 - 00 | pty1 | PTY | 1 | Disabled - free | n/a | SCH
TTY 11 | 0 - 00 | pty2 | PTY | 2 | Disabled - free | n/a | SCH
TTY 12 | 0 - 00 | pty3 | PTY | 3 | Disabled - free | n/a | MTC, SCH, BUG
Command Results:
Cancel
Select an I/O port and a command in the pop-up or Maintenance menu

The command results area in the lower portion of the window displays the results of Maintenance menu commands.

I/O Ports column definitions

The I/O Ports window provides columns of information about each port in the system. The I/O Ports list is initially sorted by port type and number. Table 43 describes each column.

Table 43
I/O Ports window column descriptions (Part 1 of 2)

Column name	Description
Type	Type and number of I/O port: • Teletype (TTY) • Printer (PRT) • Application Module Link (AML) • D-Channels • Intercept Computer Update Link (ICP) • Ethernet Local Area Network (ELAN) • Single Terminal Access (STA) • D-channel Digital Signaling Link (DDSL) • Low Speed Signaling Link (LSSL)
Device	Physical address of the card or port.
Cabinet-Card	Physical address of the card on 11C systems
Designation	Port name.
Card Type	Card containing the I/O port: • Serial Data Interface Card (SDI) • Enhanced Serial Data Interface Card (ESDI) • D-channel Interface Card (DCHI) • Multi-purpose Serial Data Link Card (MSDL)
Port	Port number on the card.
Device Status	Current maintenance status of the port.

Table 43
I/O Ports window column descriptions (Part 2 of 2)

Column name	Description
Card Status	Current maintenance status of the card. Applies only to MSDL Cards.
User Type	Indicates current port usage. • ACD: Automatic Call Distribution printer • APL: Auxiliary Processor Link • ICP: Intercept Computer Update Link • LSL: Low-speed AUX link • HSL: High-speed AUX link • XSM: System monitor • BGD: Background terminal • CTY: Call Detail Recording (CDR) TTY for CDR records • PMS: Property Management System Interface (PMS) • BUG: BUG messages included on port • CSC: Automatic Set Relocation and Attendant Administration messages (CSC) included on port • FIL: Output filtered messages included on port • MCT: Malicious Call Trace messages included on port • MTC: AUD, BUG, and ERR messages included on port • NOO: No overlay allowed on port • SCH: Service Change or any database change included on port • TRF: Traffic reports included on port

Supported I/O Ports commands

Table 44 lists the supported I/O Ports hardware and commands. Use System Terminal for hardware or commands not supported by the I/O Ports window.

Table 44
Supported I/O Ports commands (Part 1 of 2)

Hardware	Supported	Commands supported
TTY port on SDI/MSDL card	Yes	All except test command
XSM (System Monitor) on SDI/MSDL card	Yes	All
PRT - Printer port on SDI/MSDL card	Yes	All except test command
PTY - Pseudo TTY port	Yes	All

Table 44
Supported I/O Ports commands (Part 2 of 2)

Hardware	Supported	Commands supported
AML - (Application Module Link) on an ESDI/MSDL card	Yes	All except message monitor commands
ACD High Speed Port on SDI/MSDL card	Yes	All except message monitor commands
ACD Low Speed Port on SDI card	Yes	All except message monitor commands
Auxiliary Processor Links on any SDI/ MSDL card	Yes	All except message monitor commands
Intercept Computer Update ports (ICP) on any SDI/MSDL card	Yes	All except ICP application commands
D-channel on an MSDL/DCHI card	Yes	All except message monitor commands
Single Terminal Access port	Yes	All
MSDL card	Yes	All except download version x of software
ACD Low Speed Link for Meridian 1 PBX 11C Cabinet	Yes	All
ICCM ELAN for ICCM	Yes	All
DPNSS DDSL (D-channel)	Yes	All
APNSS LSSL (D-channel)	Yes	All

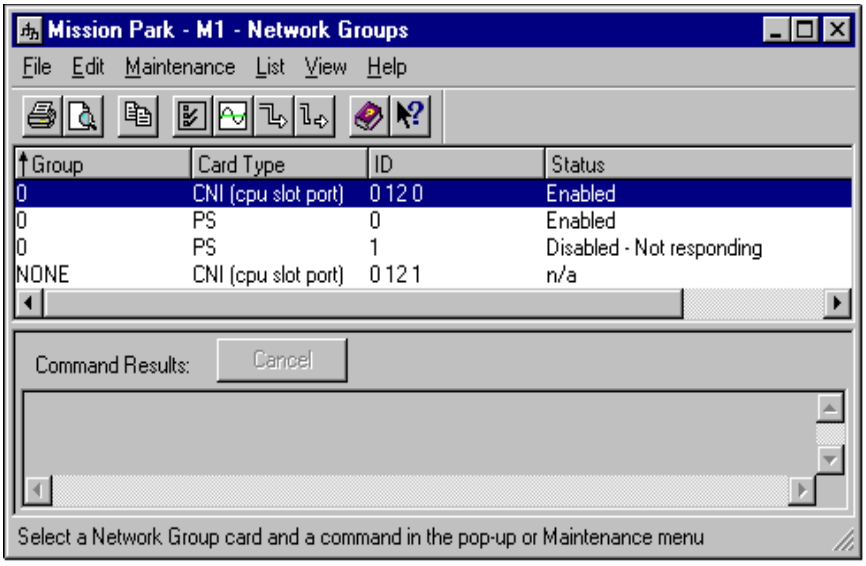
Network Groups window

The Network Groups window displays the status of all Network Group cards on the system.

Launching Network Groups

From the System window, under Core Equipment, double-click the Network Groups icon. The Network Groups window appears (Figure 304).

Figure 304
Network Groups window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

Network Groups column definitions

The Network Groups window provides columns of information about each port in the system. The Network Groups list is initially sorted by Group number. Table 45 describes each column.

Table 45
Network Groups window column descriptions (Part 1 of 2)

Column name	Description
Group	Network group identification number.
Card Type	Each network group can include the following cards: • Core to Network Interface cards (2 cards) • Peripheral Signaling cards (2 cards) • InterGroup Switch cards (4 cards)

Table 45
Network Groups window column descriptions (Part 2 of 2)

Column name	Description
ID	Card identification number. ID for CNI cards include the CPU number, slot number, and the port number.
Status	Current status of the card. For a more detailed status report, use the Status command on the Maintenance menu.

Supported Network Groups commands

Table 46 lists the supported hardware and Network Groups commands. Use System Terminal for hardware or commands not supported by the Network Groups application.

Table 46
Supported Network Groups commands

Hardware	Supported	Commands supported
Core to Network Interface (CNI) card	Yes	All
Peripheral Signaling card	Yes	All
InterGroup Switch card	Yes	All
Fiber Junctor Interface (FIJI) card	Yes	All

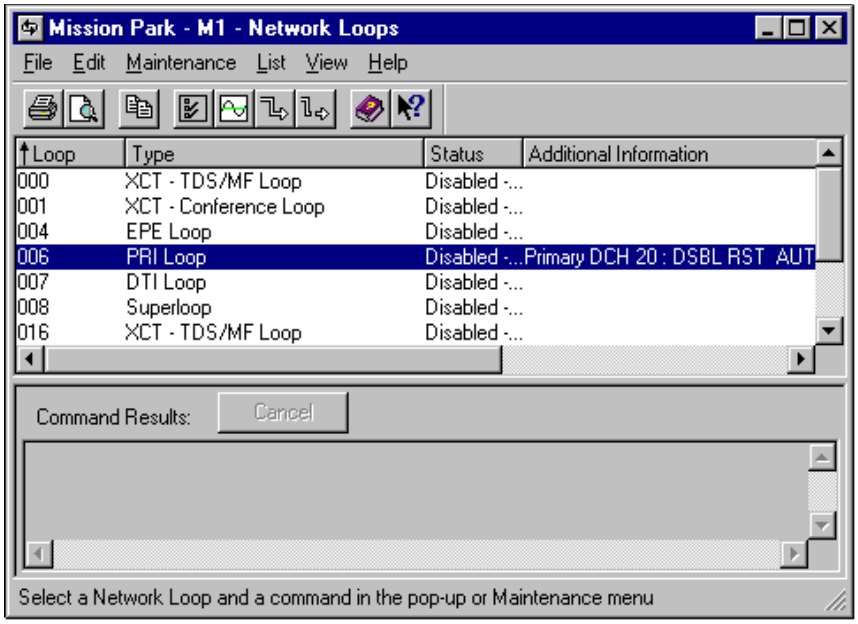
Network Loops window

The Network Loops window lists all the network loops on the Meridian 1 system.

Launching Network Loops

From the System window, under Core Equipment, double-click the Network Loops icon. The Network Loops window appears (Figure 305).

Figure 305
Network Loops window


Mission Park - M1 - Network Loops
File Edit Maintenance List View Help
Loop Type Status Additional Information
000 XCT - TDS/MF Loop Disabled -...
001 XCT - Conference Loop Disabled -...
004 EPE Loop Disabled -...
006 PRI Loop Disabled -...Primary DCH 20 : DSBL RST AUT
007 DTI Loop Disabled -...
008 Superloop Disabled -...
016 XCT - TDS/MF Loop Disabled -...
Command Results:
Cancel
Select a Network Loop and a command in the pop-up or Maintenance menu

The command results area in the lower portion of the window displays the results of Maintenance menu commands.

Network Loops column definitions

The Network Loops window provides columns of information about each loop in the system. The Network Loops list is initially sorted by Loop number. Table 47 describes each column.

Table 47
Network Loops window column descriptions

Column	Description
Loop	Loop number.*
Type	Type of Loop.
Status	Current status of the card. For a more detailed status report, use the Status command in the Maintenance menu.
Additional Information	Applies only to PRI/PRI2 and International RPE loops: • For PRI/PRI2 loops, displays the application status, link status, and designation for the Primary and Backup D-channels (DCH). • For 2.0 MB/s RPE loops, displays the RPE group number.

*Loop is replaced by slot for Meridian 1 PBX 11C Cabinet systems.

Supported Network Loop commands

Table 48 lists the supported hardware and Network Loop commands. Use System Terminal for hardware or commands not supported by the Network Loops window.

Table 48
Supported Hardware and Network Loops commands (Part 1 of 2)

Hardware	Supported	Commands supported
Enhanced PE (EPE) Network Loop card	Yes	All except test timeslot and LD45 XCON commands
Superloop cards	Yes	All except LD 45 XCON commands and enable/ disable background continuity tests
Digital Trunk Interface (DTI/DTI2) cards	Yes	All
Primary Rate Interface (PRI/PRI2) cards	Yes	All

Table 48
Supported Hardware and Network Loops commands (Part 2 of 2)

Hardware	Supported	Commands supported
Remote Peripheral Equipment (1.5 and 2.0 Mb/s) cards	Yes	All
Meridian ISDN Signaling Processor (MISP) cards	Yes	All except application download commands and Meridian Packet Handler commands
DPNSS/DASS2 cards	Yes	All
APNSS cards	Yes	All
Conference cards	Yes	All
Tone and Digit Switch cards	Yes	All
Conf/TDS cards	Yes	All
Fiber Remote (FNET) card	Yes	All
Multifrequency Sender cards	Yes	All
Phantom loops	Yes	None. Phantom loops do appear in the list of loops, but there are no overlay commands for these loops.

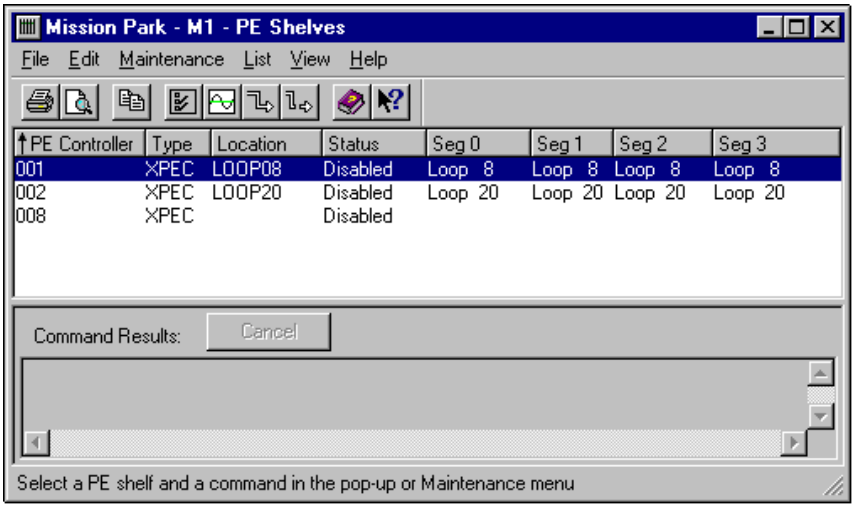
PE Shelves window

The PE Shelves window displays the status of the Peripheral Controller Cards for each PE Shelf on the Meridian 1.

Launching PE Shelves

From the System window, under Core Equipment, double-click the PE Shelves icon. The PE Shelves window appears (Figure 306).

Figure 306
PE Shelves window


Mission Park - M1 - PE Shelves
File Edit Maintenance List View Help
PE Controller Type Location Status Seg 0 Seg 1 Seg 2 Seg 3
001 XPEC LOOP08 Disabled Loop 8 Loop 8 Loop 8 Loop 8
002 XPEC LOOP20 Disabled Loop 20 Loop 20 Loop 20 Loop 20
008 XPEC Disabled
Command Results:
Cancel
Select a PE shelf and a command in the pop-up or Maintenance menu

The command results area in the lower portion of the window displays the results of Maintenance menu commands.

PE Shelves column definitions

The PE Shelves window provides columns of information about each shelf in the system. The PE Shelves list is initially sorted by Controller card number. Table 49 describes each column.

Table 49
PE Shelves window column descriptions

Column name	Description
PE Controller	Identification number associated with the PE Controller Card.
Type	Type of controller card.
Location	Location of the PE shelf containing the PE Controller Card.
Status	Current status of the PE Controller Card.
Seg 0 to Seg 3	Identifies the loop supported by each of the four PE shelf segments.

Supported PE Shelves commands

Table 50 lists the supported hardware and PE Shelves commands. Use System Terminal for hardware or commands not supported by the PE Shelves window.

Table 50
Supported PE Shelves commands

Hardware	Supported	Commands supported
Peripheral Controller (XPEC) cards	Yes	All
Fiber Remote (CARR)	Yes	All
Fiber Remote (FPEC)	Yes	All

PE Cards window

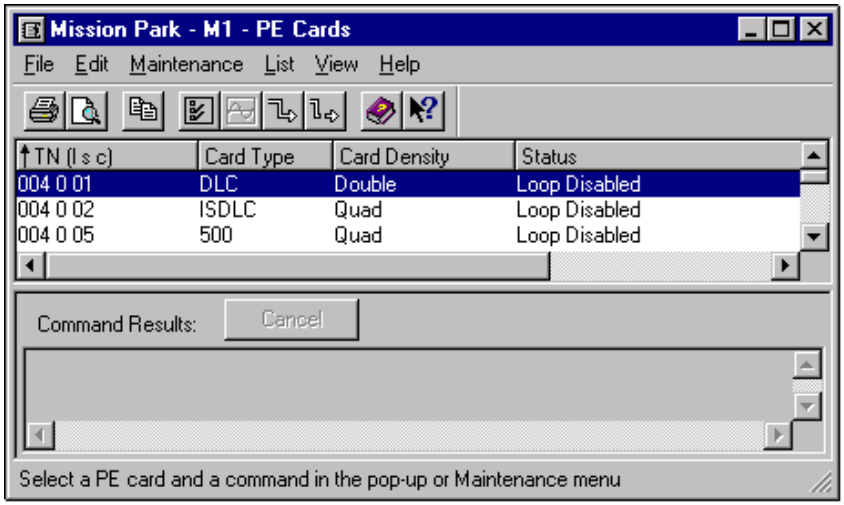
The PE Cards window displays the status of all Peripheral Equipment Cards for each PE Shelf on a Meridian 1 system or each Voice Media Gateway card on a Communication Server 1000 system.

You cannot configure the Voice Gateway Media Card through OTM. You must manually configure the Voice Gateway Media Card card in LD 11.

Launching PE Cards

From the System window, under Core Equipment, double-click the PE Cards icon. The PE Cards window appears (Figure 307).

Figure 307
PE Cards window


Mission Park - M1 - PE Cards
File Edit Maintenance List View Help
TN (l s c)
Card Type
Card Density
Status
004 0 01 DLC Double Loop Disabled
004 0 02 ISDLC Quad Loop Disabled
004 0 05 500 Quad Loop Disabled
Command Results:
Cancel
Select a PE card and a command in the pop-up or Maintenance menu

The command results area in the lower portion of the window displays the results of Maintenance menu commands.

PE Cards column definitions

The PE Cards window provides columns of information about each card in the system. The PE Cards list is initially sorted by TN. Table 51 describes each column.

Table 51
PE Cards window column descriptions (Part 1 of 2)

Column name	Description
Terminal Number (loop shelf card)	Address of the card.
***Note*:** TN is replaced with Slot for 11C. Tone Service in slot 0 is for DTR/XTD units 0–7, and DTR/XTD/MFC or MFR units 8–15. The individual units appear in the PE Units window.	
Card Type	The internal value and type of the various loops, as well as the name presented to the user. There are two types of line and trunks, one for EPE loops and one for Superloops. Superloops have a density of octal.

Table 51
PE Cards window column descriptions (Part 2 of 2)

Column name	Description
Card Density	Density of the card (this can differ from loop density): • Single • Double • Quad • Octal
Status	Current status of the PE Card. The status is a text string up to 10 characters. This is the same text as output by the overlays.

Supported PE Cards commands

Table 52 lists the supported hardware and PE Cards commands. Use System Terminal for hardware or commands not supported by the PE Cards window.

Table 52
Supported PE Cards commands (Part 1 of 2)

Hardware	Supported	Commands supported
IPE/EPE Line cards	Yes	All
ISDLC cards	Yes	All
IPE/EPE Trunk cards	Yes	All
BRI Line cards	Yes	All
BRI Signaling Processor (BRSC) cards	Yes	All
Digitone Receivers (DTR)	Yes	All
Multifrequency Receivers (DTR)	Yes	All
Tone Detector cards	Yes	All
Extended Tone Detector (XTD) cards	Yes	All
Multifrequency Signaling (MFC/MFE/MFVE/MFK5/MFK6) cards	Yes	All

Table 52
Supported PE Cards commands (Part 2 of 2)

Hardware	Supported	Commands supported
Mobility: • EIMC • MXC ***Note*:** These cards appear in the list of cards. However, you must use the Mobility application to access all maintenance commands for these cards.	 Yes Yes	 None None
Voice Gateway Media Cards	Yes	All

PE Units window

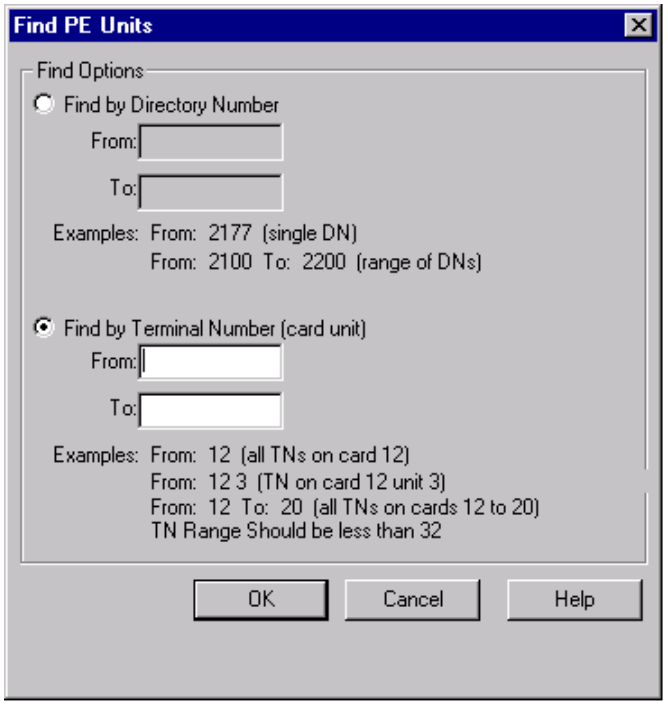
The PE Units window displays information for selected PE units and Directory Numbers on the system.

Launching PE Units

Procedure 120
Launching PE Units

1 From the System window, under Core Equipment, double-click the PE Units icon. The Find PE Units dialog box (Figure 308) appears to allow you to select a range of DNs or TNs. This helps you avoid uploading thousands of items.

Figure 308
Find PE Units dialog box


Find PE Units
Find Options
Find by Directory Number
From:
To:
Examples: From: 2177 (single DN)
From: 2100 To: 2200 (range of DNs)
Find by Terminal Number (card unit)
From:
To:
Examples: From: 12 (all TNs on card 12)
From: 12 3 (TN on card 12 unit 3)
From: 12 To: 20 (all TNs on cards 12 to 20)
TN Range Should be less than 32
OK
Cancel
Help

You can view both TNs and DNs in the PE Units window:

- Viewing by TN is more useful than print TNB.
- Viewing by DN is more useful than print DNB.

2 Make a selection of DN or TN, select a range, and then click **OK**. The PE Units window appears as shown in Figure 304 or Figure 310 (depending on whether you selected TN or DN) in the Find dialog box.

Figure 309
PE Units window (by TN)

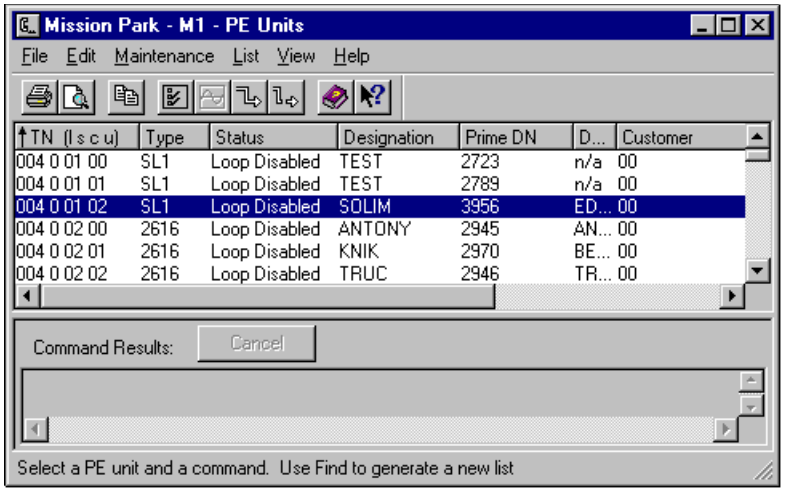
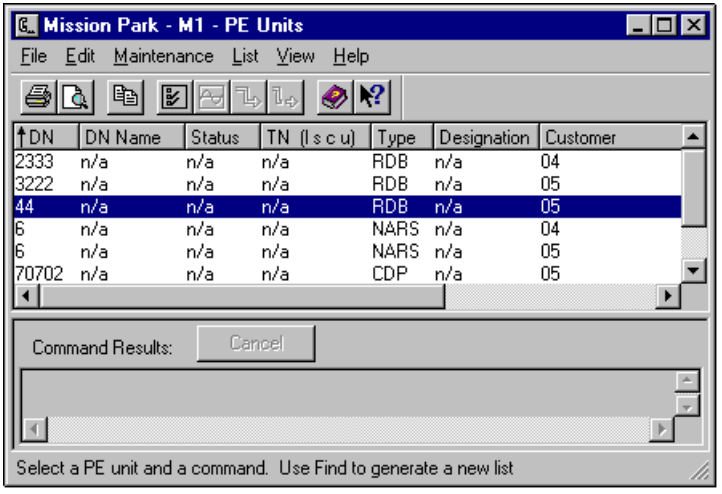

Mission Park - M1 - PE Units
File Edit Maintenance List View Help
TN (l s c u) Type Status Designation Prime DN D... Customer
004 0 01 00 SL1 Loop Disabled TEST 2723 n/a 00
004 0 01 01 SL1 Loop Disabled TEST 2789 n/a 00
004 0 01 02 SL1 Loop Disabled SOLIM 3956 ED... 00
004 0 02 00 2616 Loop Disabled ANTONY 2945 AN... 00
004 0 02 01 2616 Loop Disabled KNIK 2970 BE... 00
004 0 02 02 2616 Loop Disabled TRUC 2946 TR... 00
Command Results:
Cancel
Select a PE unit and a command. Use Find to generate a new list

Figure 310
PE Units window (by DN)


Mission Park - M1 - PE Units
File Edit Maintenance List View Help
DN DN Name Status TN (l s c u) Type Designation Customer
2333 n/a n/a n/a RDB n/a 04
3222 n/a n/a n/a RDB n/a 05
44 n/a n/a n/a RDB n/a 05
6 n/a n/a n/a NARS n/a 04
6 n/a n/a n/a NARS n/a 05
70702 n/a n/a n/a CDP n/a 05
Command Results:
Cancel
Select a PE unit and a command. Use Find to generate a new list

The command results area in the lower portion of the window displays the results of Maintenance menu commands.

End of Procedure

PE Units column definitions

The PE Units window provides columns of information about each DN and TN in the system. The PE Units window is initially sorted by DN or TN number (depending on what you specified in the Find PE Units dialog box). Table 53 describes each column.

Table 53
PE Units window column descriptions

Column name	Description
TN	Terminal number address associated with the card. This address includes the loop, shelf, card, and unit number for all systems except Option 11. For Option 11, this address includes card and unit.
DN	Directory number.
Type	Type of PE unit.
Status	Current status of the PE unit. For a more detailed status report, use the Status command on the Maintenance menu.
Designation	Additional information about the unit, such as location or cabling details, specified by the person who installed the unit.
Prime DN	Directory number (DN) associated with key 0 on the telephone.
DN Name	Name associated with the directory number.
Customer	Customer number associated with the PE unit.
Date	Last date data was updated for this unit.
NCOS	Network Class of Service group associated with the unit.
Key	Telephone key number associated with the directory number (DN).
MARP	Indicates whether this telephone is the Multiple Appearance Redirection Prime (MARP).

Supported PE Units commands

Table 54 lists the supported hardware and PE Units commands. Use System Terminal for hardware or commands not supported by the PE Units window.

Table 54
Supported PE Units commands (Part 1 of 4)

Hardware	Supported	Commands supported
500 - 500/2500 telephone	Yes	All
1250 - M1250 Console	Yes	All
2003 - 2003 telephone		
2001-Nortel IP Phone 2001	Yes	All
2002 - Nortel IP Phone 2002	Yes	All
2004 - Nortel IP Phone 2004	Yes	All
2050-Nortel IP Softphone 2050	Yes	All
PCA	Yes	All
CPVIP	Yes	All
2006 - M2006 telephone	Yes	All
2008 - M2008 telephone	Yes	All
2009 - M2009 telephone	Yes	All
2016 - M2016 telephone	Yes	All
2018 - M2018 telephone	Yes	All
2112 - M2112 telephone	Yes	All
2216 - M2216 telephone (ACD)	Yes	All
2250 - M2250 Console	Yes	All
2317 - M2317 telephone	Yes	All
2616 - M2616 telephone	Yes	All
3000 - M3000 Touchphone	Yes	All
3901 - M3901 telephone	Yes	All
3902 - M3902 telephone	Yes	All
3903 - M3903 telephone	Yes	All
3904 - M3904 telephone	Yes	All
***Note*:** The manual test command is not supported for any trunk type.		

Table 54
Supported PE Units commands (Part 2 of 4)

Hardware	Supported	Commands supported
3905 - M3905 Call Center telephone	Yes	All
3903H - M3903 Virtual Office Host Telephone	Yes	All
3904H - M3904 Virtual Office Host Telephone	Yes	All
ADM - Add-on Data Module	Yes	All
AID - AIOD trunk	Yes	All
ATT - QCW3/4 Console	Yes	All
ATVN - Autovon trunk	Yes	All
AWR - Automatic Wake-Up RAN/Music trunk	Yes	All
CMOD - Class Modem	Yes	All
BRI - Basic Rate Interface	Yes	All
COT - Central Office Trunk	Yes	All
CSA - CCSA trunk	Yes	All
DECT - Nortel Integrated Digitally Enhanced Cordless Telecommunications (DECT)	Yes	All
DIC - Dictation trunk	Yes	All
DCE - Digital Cordless Set	Yes	All
DID - DID trunk	Yes	All
DTD - Dial Tone Detector	Yes	All
DTR - Digitone Receiver	Yes	All
FEX - Foreign Exchange trunk	Yes	All
FGDT - Feature Group D Trunk	Yes	All
IDA - Integrated Digital Access	Yes	All
ISA - Integrated Services Access trunk (ISDN)	Yes	All
IP Line/Trunk- IP Telephony Gateway	Yes	All
MCU - Communications Unit	Yes	All
MDM - Modem/Data Module	Yes	All
MFC - Multifrequency Signaling	Yes	All
MFE - Multifrequency Signaling for Socotel sender/ receiver	Yes	All
***Note*:** The manual test command is not supported for any trunk type.		

Table 54
Supported PE Units commands (Part 3 of 4)

Hardware	Supported	Commands supported
MFK5/MFK6 - Spanish KD3 MF Signaling	Yes	All
MFR - Multifrequency Receiver (FGD)	Yes	All
MFVE - Multifrequency versatile units	Yes	All
MUS - Music trunk	Yes	All
OOSS - Out of Service Terminal	Yes	All
PAG - Paging trunk	Yes	All
PWR - Power	Yes	All
R232 - Data Access unit	Yes	All
R422 - Data Access unit	Yes	All
RAC - Real Analog Channel	Yes	All
RAN - Recorded Announcement trunk	Yes	All
RCD - Recorder trunk	Yes	All
RDC - Real Digital Channel	Yes	All
RLM - Release Link Main trunk	Yes	All
Mobility • MPORTBL ***Note*:** This card appears in the list of cards. However, you can only access the maintenance commands using the Mobility application.	Yes	None
RLR - Release Link Remote trunk	Yes	All
SL1 sets	Yes	All
TCON - Tandem Connection for MPH	No	None
TDET - Tone Detector	Yes	All
TIE - TIE trunk	Yes	All
VAC - Virtual Analog Channel	Yes	All
VDC - Virtual Digital Channel	Yes	All
WAT - Wide Area Telephone Service trunk	Yes	All
***Note*:** The manual test command is not supported for any trunk type.		

Table 54
Supported PE Units commands (Part 4 of 4)

Hardware	Supported	Commands supported
XTD - Extended Dial Tone Detector and Digitone Receiver	Yes	All
DN types: ACDN, ADCP, CDN, CDP, CHDN, DISA, DSDN, FCC, LDN, MCDN, NARS, PARK, RDB, REFx, RLDN, RSA, SFP, SS25, T100, TSTx, VNS, IADN	Yes	These are DNs that have no associated TN. Typically, the only command is print DN block.
***Note*:** The manual test command is not supported for any trunk type.		

B- and D-channels window

The B- and D-channels window displays the channels on the selected digital trunk. It allows you to execute overlay commands for a selected channel by choosing commands from the Maintenance menu. The results appear in the Command Results area of the window. The Cancel button allows you to terminate a command in progress.

The following types of channels appear in the B- and D-channels window:

- B-channel on a PRI/PRI2/DTI/DTI2/DPNSS loop
- D-channel on DCHI Card
- D-channel on MSDL Card
- Real Analog Channel (RAC)
- Real Digital Channel (RDC)
- Virtual Analog Channel (VAC)
- Virtual Digital Channel (VDC)

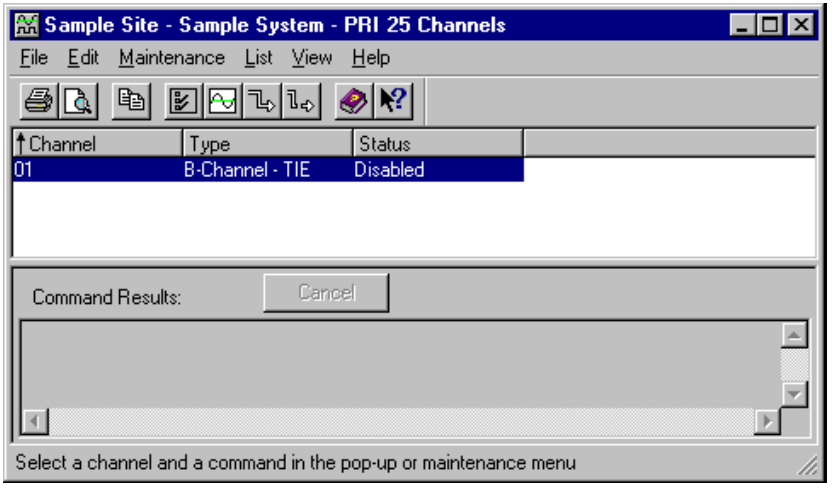
Launching B- and D-channels

Procedure 121
Launching B- and D-channels

1 From the System window, under Core Equipment, double-click the Network Loops icon. Select a PRI/PRI2 loop.

2 From the Maintenance menu or the right mouse pop-up window, select **Channels**. The B- and D-channels window appears (Figure 311).

Figure 311
Channels window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

End of Procedure

B- and D-channels column definitions

The B- and D-channels window provides columns of information about each loop in the system. The B- and D-channels list is initially sorted by Channel number. Table 55 describes each column.

Table 55
B- and D-channels window column descriptions

Column name	Description
Channel	Number associated with the channel. PRI loops may have 0–23 channels; PRI2 loops may have 0–29 channels.
Type	Type of channel.
Status	Current status of the channel.

Supported B- and D-channel commands

Table 56 lists the supported hardware and commands. Use System Terminal for hardware or B- and D-channel commands not supported by the B- and D-channels window.

Table 56
Supported B- and D-channels commands

Hardware	Supported	Commands supported
The window contains the list of channels for the selected loop. You can also access D-channels from the I/O ports window.	Yes	All, except enable all channels on DTI cards and loopback test commands

UIPE D-Channel Monitoring Tool Enhancement

To enable or disable a message, or enhance monitoring, select one of the following:

For a Level Craftsperson command

- Select **DCH> DCH Monitoring>Set.** Choose **Outgoing** or **Incoming Message Monitor**.. Choose **Level 0**, **Level 1**, or **Level 2**.
- Select **DCH> DCH Monitoring>Flush.**

For enabling/disabling messages

Select **DCH> DCH Monitoring**. Choose **Enable** or **Disable**.

- For Enable: Choose **Outgoing**, **Incoming** or **Reset Message Monitor**. Choose **UIPE** or **Q.931**
- For Disable: Choose **Outgoing** or **Incoming Message Monitor**. Choose **UIPE** or **Q.931**

Inventory Reporting

The OTM Inventory Reporting application allows you to generate system inventory files and download them to your PC. The inventory files list cards and sets installed in your system.

You must have Microsoft Excel to use the Inventory Reporting application. You also need an Ethernet connection to your system. For more information on co-residency compatibility, see "Appendix A" in the *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) guide.

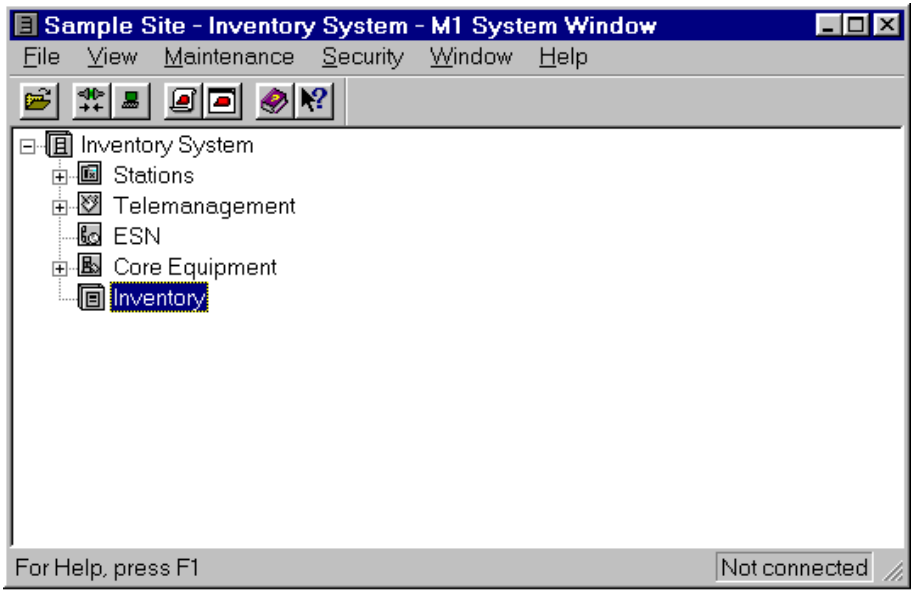
Inventory Reporting is based on LD 117. For additional overlay information, see the *Software Input/Output: Administration* (553-3001-311) and the *Software Input/Output: Maintenance* (553-3001-511).

Procedure 122
Launching Inventory Reporting

1. In your OTM Navigator window, open a System Window for the Meridian 1 or Communication Server 1000 system that you want to inventory (Figure 312 on page 676).
2. Connect to that system. (See "Using Windows Navigator" on page 77 for procedures.)

   If you do not connect to a system before opening Inventory Reporting, some features are disabled.

Figure 312
Sample System Window

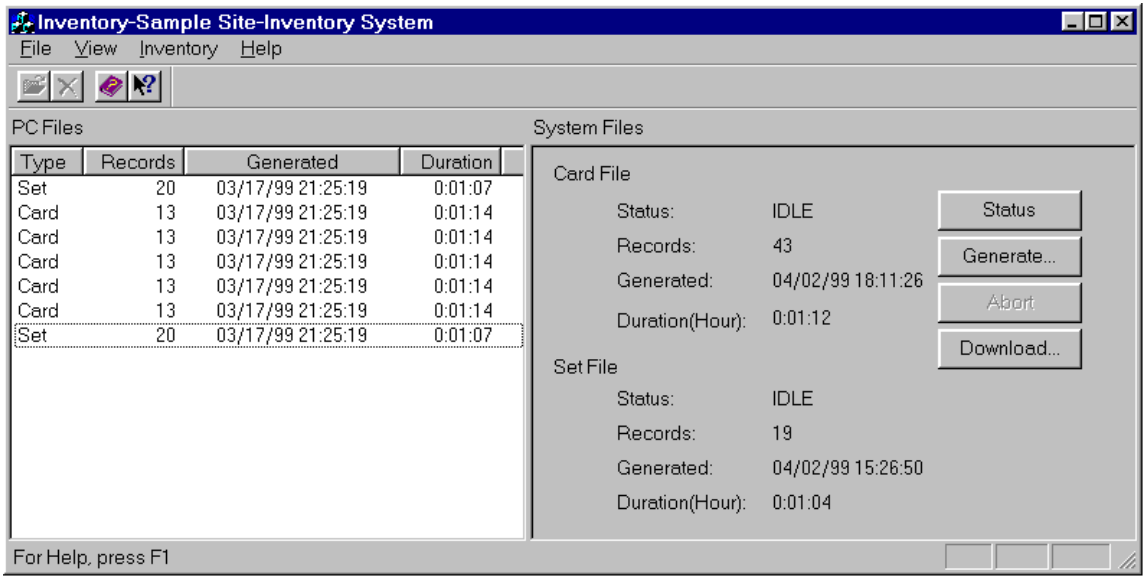


3 Once connected, double-click the System Window Inventory icon.

If you have not connected to a system, a dialog box appears asking if you want to connect. Click **Yes** to connect to a system, or click No to proceed without connecting.

The Inventory window appears (Figure 313).

Figure 313
Inventory window



The main Inventory window contains the PC Files frame and the System Files frame. The PC Files frame lists inventory files downloaded from the system. The System Files frame provides status and statistics for the system.

Main window menus

Inventory Reporting's main window menus include the following commands:

- File
  - **Open:** Open the file selected in the list view of the PC File frame.
  - **Delete:** Delete the file selected in the list view of the PC File frame.
  - **Exit:** Exit the Inventory window.
- View
  - **Toolbar:** Toggle the Inventory toolbar.
  - **Status Bar:** Toggle the status bar.
  - **Automatic Status:** If selected, Inventory Reporting updates the inventory file status displayed on the System File frame every 10 seconds.
- Inventory
  - **Download...:** Download one or more inventory files from the system.

  - — **Generate...:** Generate one or more inventory files.
  - — **Status:** Query the inventory status of the system.
  - — **Abort...:** Abort any file generation now running on the system.
- Help
  - — **Help Topic:** Provide a list of Help topics.
  - — **What's This?:** Change the cursor and display Help information about the next item you select.
  - — **About Inventory...:** Provide Inventory Reporting application release information.

Inventory files

The PC Files frame lists all inventory files downloaded from the system. There are two types of inventory files available:

- Card Inventory files
- Set Inventory files

To open a file:

1 Select a file in the list.

2 Click **File > Open**.

Inventory Reporting creates a temporary report file (*.CSV), which opens in Microsoft Excel.

To delete a file from the list:

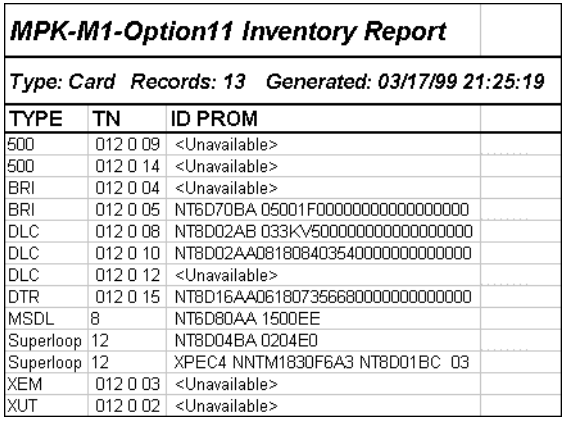
1 Select a file in the list.

2 Click **File > Delete**.

Card Inventory files

The Card Inventory file provides columns of information in Excel about each card configured in the system. Table 57 describes each column. A sample inventory report for cards is shown in Figure 314 .

Figure 314
Sample Card Inventory file



MPK-M1-Option11 Inventory Report

Type: Card Records: 13 Generated: 03/17/99 21:25:19

TYPE	TN	ID PROM
500	012 0 09	<Unavailable>
500	012 0 14	<Unavailable>
BRI	012 0 04	<Unavailable>
BRI	012 0 05	NT6D70BA 05001F000000000000000000
DLC	012 0 08	NT8D02AB 033KV5000000000000000000
DLC	012 0 10	NT8D02AA0818084035400000000000000
DLC	012 0 12	<Unavailable>
DTR	012 0 15	NT8D16AA0618073566800000000000000
MSDL	8	NT6D80AA 1500EE
Superloop	12	NT8D04BA 0204E0
Superloop	12	XPEC4 NNTM1830F6A3 NT8D01BC 03
XEM	012 0 03	<Unavailable>
XUT	012 0 02	<Unavailable>

Table 57
Card Inventory file column descriptions

Column name	Description
TYPE	Card type.
TN	Terminal number address associated with the card.
ID PROM	32 byte ASCII string whose characters (in order) represent: • Product Engineering Code (PEC) • Color (numeric representation) • Release • One blank character • Product Serialization ID • One blank character • Other (free field)

The following card types are included in the Card Inventory file:

- All IPE and common equipment cards
- All Meridian 1 or Communication Server 1000 cards that have a Hardware ID (also known as ID PROM)

The following card types are not included in the Card Inventory file:

- Cards manufactured without an ID PROM
- TTY or PC cards
- Power Supply
- Any non-Nortel (third-party) cards, including those designed to simulate included cards

Set Inventory files

The Set Inventory file provides columns of information in Excel about each set configured in the system. Table 58 on page 681 describes each column. A sample inventory report for sets is shown in Figure 315.

Figure 315
Sample Set Inventory file

MPK-M1-Option11 Inventory Report				
Type: Set Records: 20 Generated: 03/17/99 21:25:19				
TYPE	TN	ID PROM	DESIGNATOR	PRIMARY DN
2016	012 0 08 06	<Unavailable>	2016	2032
2016	012 0 08 22	<Unavailable>	MCA	2332
2216	012 0 08 03	<Unavailable>	AGNT1	2951
2216	012 0 08 08	<Unavailable>	NAGNT1	3951
2216	012 0 08 09	<Unavailable>	NACD	4950
2216	012 0 08 10	<Unavailable>	NAGNT1	4951
2616	012 0 08 00	<Unavailable>	2616	2020
2616	012 0 08 02	M2616 NT2K16WK 35 01 C31632	2616	20210
2616	012 0 08 04	M2616 NT2K16WM 35 01 C310C8	2616	2022
2616	012 0 08 11	M2616 NT2K16WN 35 01 33A45D	2616	3021
2616	012 0 08 12	<Unavailable>	2616	4021
2616	012 0 08 16	<Unavailable>	MCA	2320
2616	012 0 10 00	<Unavailable>	DJL	0
3901	012 0 08 15	<Unavailable>	TAUR	0
3905	012 0 08 14	<Unavailable>	TAUR2	0
AWR	012 0 02 06	<Unavailable>	AGNT1	0
R232	012 0 12 00	<Unavailable>	R232	2301
R232	012 0 12 01	<Unavailable>	R232	2302
R232	012 0 12 04	<Unavailable>	R232	2303
R232	012 0 12 05	<Unavailable>	R232	2304

Table 58
Set Inventory file column descriptions

Column name	Description
TYPE	Set type.
TN	Terminal number address associated with the set.
ID Prom	32 byte ASCII string whose characters (in order) represent: • Set Type • 6 Blank Characters • Product Engineering Code (PEC) • Color (numeric representation) • Release • One blank character • Product Serialization ID • One blank character • Other (free field)
DESignator	6-character ASCII string used by Station Administration and LD 11.
Primary DN	Primary directory number.

The following sets are included in the Set Inventory file:

M2006	M2008
M2016	M2616
M2216	M390X
M3110	M3310
M3820	IP Phones

The following sets (and data units) are not included in the Set Inventory file:

- Data units on: M2006, M2008, M2016, M2616, M2216, M390X

M3110 M3310

M3820

- SL-1 sets and data units
- 500/2500 sets and data units
- Any other digital sets or data units
- Any non-Nortel (third-party) sets, including those designed to simulate included sets

Generate an inventory file

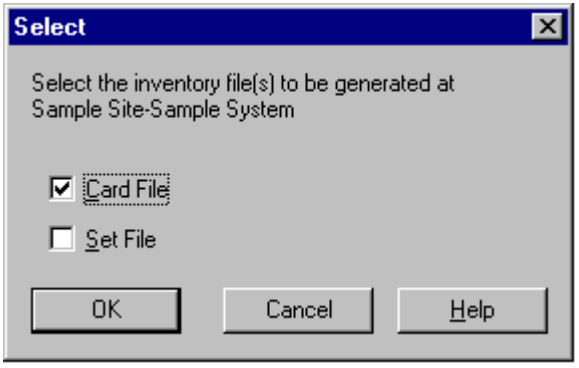
Procedure 123
Generating an inventory file

You will need System Administrator privileges to generate an inventory file.

1 In the Inventory window, select **Inventory > Generate...**

The Select file to generate dialog box appears (Figure 316).

Figure 316
Select file to generate



2 Select **Card File** check box to generate the Card Inventory file.

3 Select **Set File** check box to generate the Set Inventory file.

If both boxes are selected, both files are generated.

4 Click **OK** to begin generating the file(s).

Note: If the Inventory program is opened for two systems on two PCs, and both of these PC's IP addresses are set in LD 117 to receive SNMP traps, both PCs will receive the "Generate Complete" message, even if inventory was generated for only one of the systems.

End of Procedure

Download an inventory file

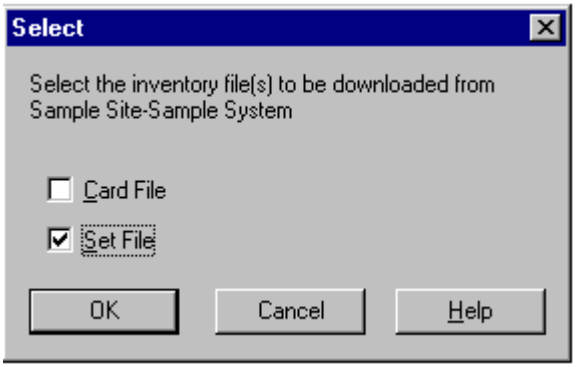
Procedure 124
Downloading an inventory file

You need System Administrator privileges to download an inventory file.

1 In the Inventory window, select **Inventory > Download...**

The Select file to download dialog box appears (Figure 317).

Figure 317
Select file to download



2 Select the Card File check box to download the Card Inventory file.

3 Select the Set File check box to download the Set Inventory file. If both boxes are selected, both files are downloaded.

4 Click **OK** to begin downloading the file(s).

End of Procedure

Check file generation status

To check file status:

In the Inventory window, select **Inventory > Status**.

The System Files frame information is updated. Set and Card Inventory status consists of a state value and a substate value. See Table 59 and Table 60 for their interpretations.

Table 59
Valid state values

State value	Meaning
IDLE	There is no activity on the switch involving the inventory files.
BUSY	An inventory file is in use.

Table 60
Valid substate values

Substate value	Meaning
NONE	There is no activity on the switch involving the inventory files.
GENERATING	An inventory file is being generated by the switch software.
DOWNLOADING	An inventory file is being downloaded from the switch to the PC.

Abort file generation

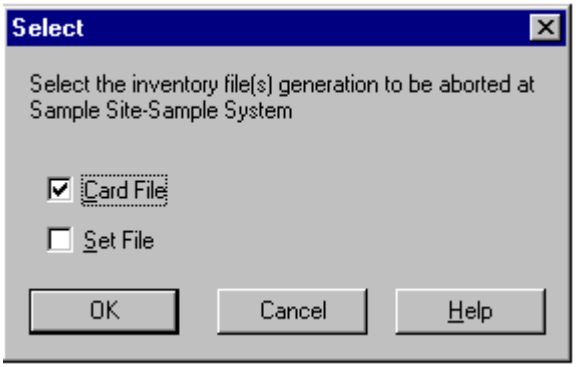
Procedure 125
Aborting file generation

You need System Administrator privileges to abort generation of an inventory file.

1 In the Inventory window, select **Inventory > Abort**.

The Select file to abort dialog box appears (Figure 318).

Figure 318
Select file to abort



2 Select **Card File** check box to abort generation of the Card Inventory file.

3 Select **Set File** check box to abort generation of the Set Inventory file. If both boxes are selected, both files are aborted.

4 Click **OK** to abort generation of the file(s).

End of Procedure

Traffic Analysis

Traffic Analysis considerations

CAUTION — Service Interruption

When OTM is upgraded from releases 1.2 or 2.0 to release 2.2, the traffic database is converted to a new format. Any traffic data archived in the older releases cannot be restored onto the new OTM 2.2 release. An attempt to perform such a restore will result in corruption in the traffic database.

Help

This chapter does not discuss each Traffic Analysis function and command in detail. It only discusses the major functions and how they are accessed. As with the other OTM applications, Traffic Analysis contains an extensive Help facility, which provides you with details on all of its functions and commands. At any time during your Traffic Analysis session, you can press <F1> or click Help to access information on a specific topic. You can also click Help Topics from the Help drop-down menu of the Traffic Analysis main window, and search for Help using the Windows Help search functions.

To obtain Help for a topic, press <F1> or click Help from the currently selected dialog box or window. This accesses the Windows Help function and displays context-sensitive Help information on the current topic.

Once you have accessed Help, use it to scroll through the other Help topics, search for a specific topic, and print Help information.

Traffic Analysis system sizing guidelines

System sizing for Traffic Analysis must consider several factors to ensure adequate capacity and throughput to retrieve, store, and report on traffic data. The major factors are as follows:

1. Does the system have enough free disk space to store and maintain the traffic data?
2. Is there sufficient communications bandwidth to perform traffic data collection from all systems in time?
3. Does the system have sufficient resources to provide reports on time?

Traffic Database capacity

The size of the Traffic Database varies depending on the system. The Traffic Database will also grow rapidly depending on how much data is kept for reporting purposes. Since the active database should normally be archived monthly (thus retaining the previous month's traffic data for reporting, as well as updating statistics on the current month), you should expect to store about two months of data in the Traffic Database. Older data should be routinely archived and moved to external storage. Since, however, it is normally stored transiently on disk as well, you should reserve capacity for the archive operation.

The actual size of the database depends on your specific configuration parameters, such as the number of loops, trunks, consoles, and so on.

Use the following example formula to estimate the size of the Traffic Database (including a one-month archive). This example formula assumes that traffic data collection is scheduled for each hour in the day (that is, you are not excluding any time for maintenance on the system), and that you have 31 days of archived data and 61 days of active data:

24 hours x (61 days + 31 days of archive) = 2208 Traffic Database samples

Thus, you should allow for 2500 samples (this allows for temporary files used during reporting). Use the following calculation to determine the total bytes required for one

(1) Traffic Database sample. Once you have calculated the total bytes for 1 sample, you must then multiply it by the total number of samples:

1 Traffic Database sample =

[(Network Loops x 29) + (Junctor Groups x 17) +

((C/S Links + A/M Links) x 240) + (D-Channels x 115) +

(Multi-Purpose ISDN Signaling Processors x 59) +

(Customers x 424) + (Route Lists x 299) +

(Individual Attendants x 39) + (Network Classes of Service x 35) +

(Incoming Trunk Groups x 35) + etc.]

Communications throughput

The amount of time that it takes a system to collect traffic data depends on the number of systems to collect, the system configuration, the communication line speed, and the number of communication ports available on the Optivity Telephony Manager (OTM) system.

Traffic data is produced hourly by the systems. This data is either collected hourly by Traffic Analysis from the Meridian 1 or Communication Server 1000 system, or daily from an optional data buffer device, which is connected to the system and stores the hourly data. Once retrieved, the data is compressed by a 4:1 ratio for reporting. After having calculated the size of the database sample, you can calculate the time required to transfer the data. These calculations allow for dialing, connection, logon, traffic data requests, logout, and disconnect:

- No buffer device—hourly:

  Seconds to Collect Sample = [Setup + (Compression Ratio x Size of Traffic Sample) ÷ Modem Speed]

- With a buffer device—daily:

  Seconds to Collect Sample = [Setup + (Hours per Day x Compression Ratio x Size of Traffic Sample) ÷ Modem Speed]

For both cases, allow 40 seconds for setup, and allow 85% throughput on modem speed for buffer protocol.

The goal is to ensure that the time required to collect data from all systems, using all available communications paths, is less than the interval between collection cycles. Note that modem speeds are typically rated by baud rate, which roughly translates to bits per second. As a rule of thumb, use 10 bits per byte in calculating modem speed. A 2400 baud modem delivers about 240 bytes per second.

Sample calculation

The following is an example for Traffic Database sizing and a communication throughput estimate:

Switch Meridian 1 PBX 61 + 2400 baud modem (no buffer device)

7 Network Loops	x 29	= 203
1 Junctor	x 17	= 17
1 Link	x 240	= 240
0 D-Channels	x 115	= 0
0 MISPs	x 59	= 0
1 Customer	x 424	= 424
9 Route Lists	x 299	= 2691
1 Ind. Attendant	x 39	= 39
0 NCOS's	x 35	= 0
2 In. Trunk Groups	x 35	= 70
		3684 bytes total
Disk Requirements	= 2500 x 3,684	
	= 9,210,000 bytes (assumes two months on-line)	

Hourly:

Data Collection Duration	= 40 + (4 x 3684) ÷ (240 x 0.85)
	= 112 seconds = 1:52 minutes each hour

Daily:

Data Collection Duration	= 40 + (24 x 4 x 3684) ÷ (240 x 0.85)
	= 1774 seconds = 29:34 minutes each day

System resources

The resources required to produce reports are provided by the Windows environment and are affected by activities on the system. System loads use CPU, memory, disk storage, and bandwidth. A typical application such as a word processor or electronic mail may generate little CPU load, but can put large demands on memory.

In any Windows environment, memory (RAM) can be extended through the use of virtual memory. Virtual memory allows the PC to use disk space as if it were RAM. Both RAM and virtual memory must be available in sufficient quantity for all concurrent system activities. A shortage of memory either prevents an application from running or slows the overall system.

CPU loading depends on the frequency and number of reports. While the system is designed to concurrently generate multiple reports (only for multiple systems), the system runs at maximum throughput when generating one report at a time.

The Windows Print Manager ensures that data from separate reports are not mixed up on the printer. To perform this function, the Print Manager temporarily stores reports on disk (the Print Manager has a backlog limit of 99 print jobs). Therefore, the CPU speed, available virtual memory, and printer speed dictate the time required to produce the reports and the practical system limits to traffic data throughput.

Setting up and running Traffic Analysis

Before using Traffic Analysis, you must install and configure it as part of the OTM system. Refer to "Configuring sites and systems" on page 97 for complete details on configuring Traffic Analysis and assigning it to a site and system.

System access

To access Traffic Analysis from the OTM Navigator, click the desired site and system, and then click Traffic Analysis in the Telemanagement menu. The main Traffic Analysis window appears.

After you have assigned Traffic Analysis to a site and system, you can use it to collect traffic data, generate reports and graphs, and maintain its databases.

Before you can begin collecting traffic data and report on it, you must enter the parameters for the data collection and report generation processes. The following section provides a complete example of how to accomplish these tasks, as well as instructions for scheduling and starting data collection from the system.

IMPORTANT!!

When a Limited Access Password (LAPW) is defined to collect traffic data from LD 02, configure the password to have access to all customers by setting the CUST prompt to ALL. For more information about Limited Access to overlays, see *Features and Services* (553-3001-306)

Traffic Analysis example

The following example is provided to assist you in setting up Traffic Analysis.

The instructions in this example assume that you have successfully installed the OTM software and completed the OTM configuration tasks described in "Common services."

This example illustrates how to accomplish the following tasks:

- Run OTM and open a site and system.
- Run Traffic Analysis.
- Set up the Meridian 1 or CS 1000 system for traffic collection.
- Collect traffic data from the system.
- Print a D-Channel Report that contains data for incoming and outgoing calls.

Run OTM and open site/system

Before you run Traffic Analysis, you must first run the OTM Navigator and open this site and system. You can then select Traffic Analysis from the Telemanagement menu in this system's window.

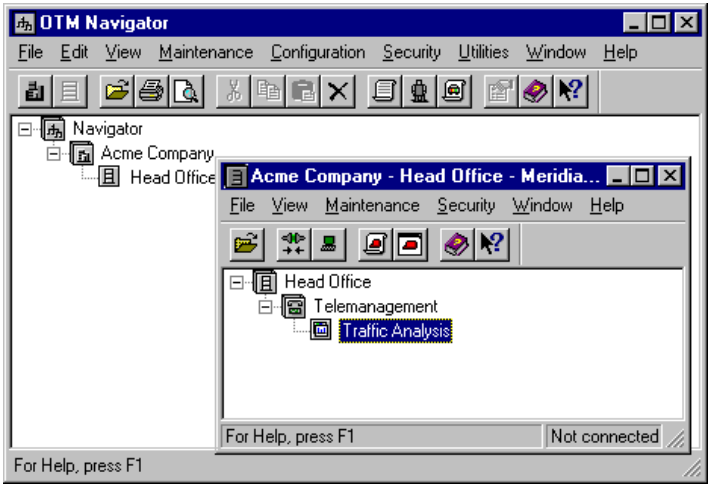
This system must already have been created using the System Configuration function. Refer to Section 2: Windows Navigator-Common Services for more details on the System Configuration function.

Procedure 126
Opening the site and system

1. Run the OTM Navigator by clicking the OTM Navigator icon. At the Login dialog box that appears, enter your user ID and password, and then click **OK** to continue.
2. To open the site and system for this example (for example, site name is Acme Company and system name is Head Office), click Acme Company in the OTM Navigator window, and then double-click Head Office from this site.

   This accesses the system window for the Head Office (Figure 319).

Figure 319
OTM Navigator system window—Acme Company Head Office



End of Procedure

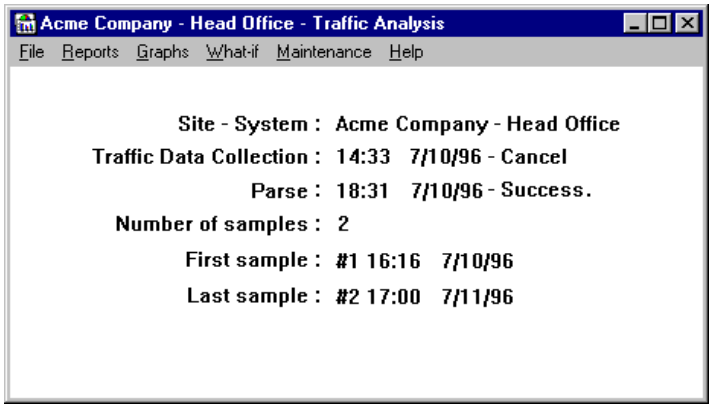
Run Traffic Analysis

Procedure 127
Running Traffic Analysis

1 From the system window, click **Telemanagement** menu item. This displays the OTM applications that have been assigned to the system Head Office under Telemanagement (for example, Telecom Billing System, Call Tracking, and Traffic Analysis).

2 To run Traffic Analysis, double-click Traffic Analysis from this menu. The Traffic Analysis main window appears (Figure 320).

Figure 320
Traffic Analysis main window


Acme Company - Head Office - Traffic Analysis
File Reports Graphs What-if Maintenance Help
Site - System : Acme Company - Head Office
Traffic Data Collection : 14:33 7/10/96 - Cancel
Parse : 18:31 7/10/96 - Success.
Number of samples : 2
First sample : #1 16:16 7/10/96
Last sample : #2 17:00 7/11/96

End of Procedure

Assign Traffic Analysis to system (if not already assigned)

If Traffic Analysis has not been assigned to this system, it does not appear in the Telemanagement menu. To assign Traffic Analysis to this system, perform the following steps.

Procedure 128
Assigning Traffic Analysis to system (if not already assigned)

1 Click **Applications** tab to assign Traffic Analysis to this system.

2 Click **Traffic Analysis** in application list box.

3 From the Communications Profile drop-down list box, select the communications profile that you just entered in the Communications tab.

4 Click **Traffic Analysis** in the Applications list box to highlight it and select the Enable check box. Notice that the flag Yes appears in the Enabled field next to Traffic Analysis in this list box.

End of Procedure

Set up the system for traffic data collection

Follow these steps to set up the system for traffic data collection. You only need to perform this step once when you initially set up Traffic Analysis.

Procedure 129
Setting up the system for traffic data collection

1 Click **Traffic Data Collection** from the Maintenance drop-down menu of the Traffic Analysis main window.

2 Select **Set up PBX for Traffic** check box. This enables the system to collect and transmit data.

End of Procedure

Collect traffic data from the system

Procedure 130
Collecting traffic data from the system

1 Click **Traffic Data Collection** from the Maintenance drop-down menu.

2 Select **Schedule Traffic Collection** check box.

3 From this dialog box, click **OK** to start the traffic data collection. This schedules the load of traffic data from the system to a temporary data file TRAFFIC.DMP for parsing and report processing.

Once the system collects the initial traffic data, it then parses it into files with the names TF*nnnn*.DAT (where *nnnn* identifies the type of report that will be generated).

End of Procedure

Collect traffic data from DBA

Procedure 131
Collecting traffic data from DBA

1 Configure DBA to collect traffic. See “Data Buffering and Access (DBA).

2 Click **Traffic Data Collection** from the Maintenance drop-down menu

3 Turn on the Schedule Traffic Parse check box.

4 Select the appropriate file from the file Drop down menu.

From this dialog box, click **OK** to start the traffic data parse. This schedules the load of traffic data from the file.

***Note*:** File: From this drop-down list box, select the file that will be parsed when the Schedule Traffic Parse option has been selected in the Collection Operation list. Select Traffic.dmp if you are collecting from a DBA. Select TBSImage.dat if you are collecting from a file that was originally collected by the Telecom Billing System.

End of Procedure

Print traffic report for incoming and outgoing calls

Procedure 132
Printing traffic report

1 Before requesting a printed report, you must select your printer as the output device. From the Traffic Analysis window:

   a. Click **File**, and then click **Specify Output Device** from its drop-down menu.

   b. In the resulting dialog box, click **Printer**, and then click **OK**.

2 Click **Print Setup** from the File drop-down menu to select the printer for this report. Click **OK** to save this information and return to the Traffic Analysis main window.

3 To print the report, click **System Reports** from the Reports drop-down menu. The System Reports dialog box appears.

4 Click the Report down arrow to open the list of available system reports. To select the D-Channel Report, click D-Channel.

5 Click the Profile down arrow to view a list of available profiles for the D-Channel report. Select DCHANL.PRO - D-Channel Report. This is the default report profile used to select data for the D-Channel Report.

6 Click **Edit** next to the Profile list box to access the Profile Editor for the DCHANL.PRO report profile. A dialog box appears listing the profile’s description, options, and parameters. You can enter information here to tailor the report.

7 In the Options list, click to select only the following items:

- Incoming
- Outgoing

De-select any other highlighted items in the list.

8 To save this default profile to a new profile name, click **Save As** from the File drop-down menu. In the Save As dialog box, type: DCHANL1.PRO for the file name.

9 Click **Close** from the File drop-down menu to exit the Profile Editor and return to the System Reports dialog box.

10 Click the Filters down arrow to view a list of available filters for the report. Click **None**. This clears the Filters box so that the report includes all collected traffic data.

11 Click **OK** to print this report. A report status box indicates printing progress.

End of Procedure

Using Traffic Analysis

This section contains a general overview of the main Traffic Analysis functions as they are accessed from its main window. It briefly describes their main function and purpose. For complete details on each of these functions and their operation, refer to the Traffic Analysis online Help function.

File menu

This menu contains functions used to select an output device, set up a printer, and exit from Traffic Analysis.

To access these functions, click File from the main window, and then select from the following menu items:

- Select Output Device
- Print Setup
- Close

Reports and graphs

The Traffic Analysis reports and graphs provide the details for the traffic data collected from the system. These can be printed to an output device, to the screen for review, or to a disk file. Traffic Analysis provides a set of profiles and filters to allow you to tailor the output of these reports and graphs to suit your needs. Once you have collected the

traffic data from the system, use the commands in the Reports and Graphs menus (following sections) to generate the required reports and graphs.

Reports menu

The Reports menu contains functions and commands to print reports based on the collected traffic data.

The following are the reports available from Traffic Analysis:

System Reports

- Network Loops
- Service Loops
- Dial Tone Delay
- Processor Load
- Selected Terminals
- Junctor Group
- Command and Status Links and Application Module Links
- Command and Status Links -Outgoing Message Types
- Command and Status Links -Incoming Message Types
- D-Channel
- Multi-Purpose ISDN Signaling Processor Traffic
- Multi-Purpose ISDN Signaling Processor DCH Management
- Multi-Purpose ISDN Signaling Processor Messages
- ISDN Generic Functional Protocol
- General Microcellular Operational Measurements
- UWIN Operational Measurements
- Intrazone Etherset Data Report
- Interzone Etherset Data Report
- Intrazone QoS Data Report
- Interzone QoS Data Report

Customer Reports

- Networks

- Trunks
- Customer Console Measurements
- Individual Console Measurements
- Feature Key Usage
- Radio Paging
- Parallel Radio Paging
- Serial Radio Paging
- Call Park
- Messaging and Auxiliary Processor Links
- Output Message Traffic
- Input Message Traffic
- Message Attendant Queue
- Telephone Set Status
- Telephone Messaging
- Network Attendant Service
- Semi-Permanent Connection Links Establishment
- Music Broadcast
- RAN Broadcast

Customer Network Reports

- Route Lists
- Off Hook Queuing
- Call Back Queuing
- Remote Virtual Queuing
- Network Class-of-Service
- Incoming Trunk Group

System Threshold Reports

- Dial Tone Speed
- Loop Traffic

- Junctor Traffic
- Super Loop Traffic

Customer Threshold Reports

- Incoming Matching Loss
- Outgoing Matching Loss
- Average Speed of Answer
- Percent Last Trunk Busy
- Off-Hook Queue Overflow Threshold

Customer Summary Reports

- Traffic System Summary
- Trunks Summary
- Customer Console Summary
- Individual Console Summary

Graphs menu

Similar to the Reports menu, the Graphs menu contains functions and commands to print graphs based on the collected traffic data.

The following are the graphs available from Traffic Analysis:

System Graphs

- Network Loops
- Processor Load

Customer Graphs

- Trunks
- Customer Console Measurement
- Messaging and Auxiliary Processor Links

Customer Network Graphs

- Route Lists
- Off Hook Queuing

System Threshold Graphs

- Loop Traffic
- Super Loop Traffic

Customer Threshold Graphs

Percent Last Trunk Busy

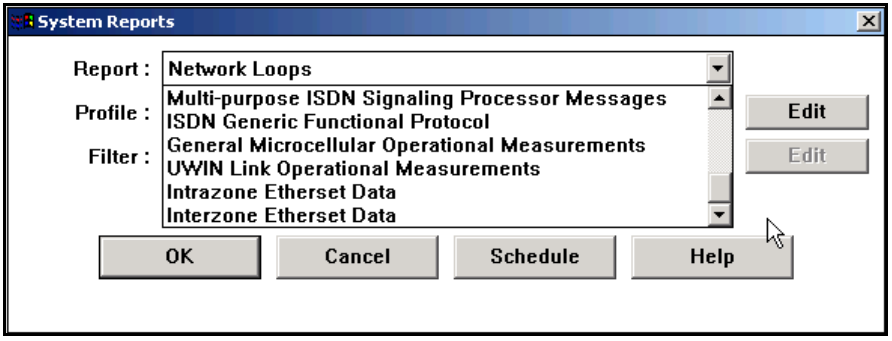
Generating reports and graphs

Procedure 133
Generating reports and graphs

1. Select the report or graph type from the Reports menu or the Graphs menu.
2. When the Report or Graph dialog box appears, enter its optional profile and filter information, and then click OK to print it.
3. Click the drop-down button to display a list of the reports or graphs in that category. Each entry in the list has one or more associated profiles and filters
4. After you click to select a report (or graph), use the same process to select the appropriate profile and filter. Edit buttons next to the Profile and Filter boxes let you review and modify the selected profile and filter.

   Figure 321 is a sample dialog box in which you can enter reporting criteria and generate the report. The corresponding Graphs dialog box operates similarly.

Figure 321
System Reports dialog box



End of Procedure

Profiles

Profiles define the kind of information to include in a report or graph. Each report or graph requires at least one profile. Traffic Analysis includes several default profiles for commonly used reports and graphs. You can define a new profile by editing one of the default profiles and saving your work under a new profile name. Profile file names use the .PRO extension.

Filters

Filters define the range of traffic data to be included on a report or graph, such as data for a specific month. Filter file names use the .FLT extension.

Exporting Reports

The Export function allows you to export traffic data from its reports to disk files in specific formats. This function is invoked when a report is generated to the screen.

After you have completed your work with profiles and filters, click one of the following buttons to proceed:

- OK to produce the report or graph
- Schedule to specify the time at which the report or graph is to be produced
- Help to obtain help for this function
- Cancel to cancel the request and return to the main window

When you have printed or scheduled the output, the system returns to the Traffic Analysis window.

What-if menu

In addition to generating reports and graphs, you can use Traffic Analysis to ask “What if?” questions on data output from the system. This is accomplished by defining scenarios and viewing hypothetical results. These “What if” scenarios provide different results based on new situations that you input into the system.

To define a scenario, select it from the list of available scenarios. Next, select a profile to define its contents and a filter to set a range for its data. This process is similar to producing a report or graph.

You can define the following “What if” scenarios:

- Processor Load

- Trunk
- Attendant Console

To access this function, open the What-if menu in the Traffic Analysis window.

Processor Load scenario

The Processor Load scenario provides information on rated capacity for your system. It lists overall and itemized information on the busy hour and the number of attempts at the busy hour rate over the rated capacity. It allows you to adjust the call attempts or the CPU type, and view the resulting change in busy hour CPU loading time.

In the filter for this scenario, enter a range with a minimum of 24 hours to make the scenario data valid.

Trunk scenario

The Trunk scenario allows you to determine the offered traffic, monthly cost, and probability of blocking a trunk or a set of trunk groups. Use this scenario to change the offered traffic or the probability of trunk blocking, and view the results for the trunks.

Attendant Console scenario

The Attendant Console scenario provides information on console response and service levels. Use this scenario to change response times and service levels, and to view the results.

Maintenance menu

Traffic Analysis provides maintenance functions that are used to manually collect traffic data; manage the Traffic Database; edit report profiles and filters; and edit text files.

Traffic Database

The Traffic Database function is used to archive a range of traffic data, as well as to merge, delete, and re-index traffic data files.

Traffic Data Collection

The Traffic Data Collection function is used to initiate data collection from the current system. Use this function to set up the system for traffic collection, and to schedule traffic data collection. For a complete list of script files used for traffic data collection, refer to “Script file summary.

Profile Editor

Every report or graph requires a profile that defines the data to be included in a report or graph. OTM provides default profiles for common reports and graphs. Use the Profile Editor to view and edit the options and parameters in a profile. You can also use profiles to store and manage sets of configuration and customization information.

Filter Editor

Filters define the range of traffic data to be included in a report or graph. The Filter Editor allows you to create or edit report filters.

Text File Editor

In certain cases, you may periodically need to view or edit a text file used by Traffic Analysis. For example, you may edit the traffic data file collected from the Meridian 1 or Communication Server 1000 system to correct any errors before the system processes the file. Use the Text File Editor command to edit any text files for Traffic Analysis.

ESN Analysis and Reporting Tool

This chapter is intended to provide you with an introduction to the OTM Electronic Switched Network (ESN) ART application, as well as an overview of its major functions.

Introduction

ESN ART allows you to manage the ESN data quickly and easily in the following ways:

- ESN data retrieval—You can retrieve ESN data blocks from the Meridian 1 or Communication Server 1000 overlays, and ESN ART converts and stores the data in a PC database. You can then view and print the data.
- ESN data installation—You can clone the PC-based ESN data from an existing switch to install a new ESN configuration on a similar switch.
- ESN data modification—You can add, change, or delete the retrieved or cloned ESN data using the ESN object managers (windows that simplify ESN data definition). You can then transfer the modified ESN data from OTM on the PC to the system.
- ESN data reporting—You can create reports ranging from basic data to data analysis reports. You can send these reports to the screen, to a printer, or to a file.
- Export ESN data—You can export Report data to a file. Various file formats are supported (for example, Excel or comma-separated values [CSV] format).
- ESN global change data—You can make global changes to these six ESN reference objects: DMI, FCI, FSNI, ITEI, RLI, and ROUT.

Help

This chapter does not discuss each ESN ART function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each ESN ART function, use the online Help function. You can use the Help function to obtain Help for topics either directly or via its index and word-search functions. While running ESN ART, you can obtain context-sensitive Help on any topic you require by simply clicking Help from a specific dialog box or window.

To obtain Help for a topic, click Help from the currently selected dialog box or window. This accesses the Windows Help function and appears context-sensitive Help information on the current topic.

Once you have accessed Help, use it to scroll through the other ESN ART Help topics, search for a specific topic, or print the Help information.

To view a list of Help topics for ESN ART, click Contents from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

Launching ESN ART

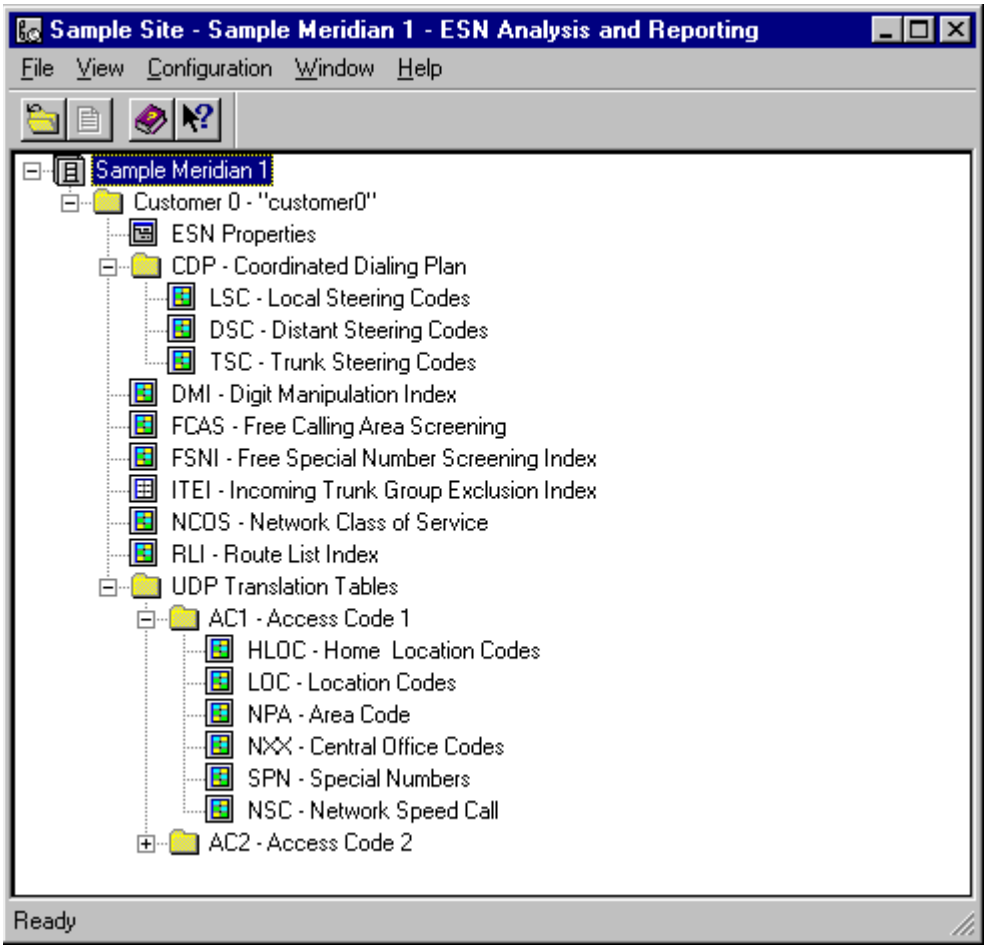
IMPORTANT!

Prior to launching the ESN ART application, the BARS and NARS packages must be enabled on system properties.

To launch the ESN ART application, double-click the ESN icon from the System window.

The ESN ART window uses the standard OTM tree control and appears a folder for each Meridian 1 or Communication Server 1000 customer (as defined in the OTM System Window properties or retrieved from the Meridian 1 or Communication Server 1000 system) (Figure 322)

Figure 322
ESN ART window


Sample Site - Sample Meridian 1 - ESN Analysis and Reporting
File View Configuration Window Help
Sample Meridian 1
Customer 0 - "customer0"
ESN Properties
CDP - Coordinated Dialing Plan
LSC - Local Steering Codes
DSC - Distant Steering Codes
TSC - Trunk Steering Codes
DMI - Digit Manipulation Index
FCAS - Free Calling Area Screening
FSNI - Free Special Number Screening Index
ITEI - Incoming Trunk Group Exclusion Index
NCOS - Network Class of Service
RLI - Route List Index
UDP Translation Tables
AC1 - Access Code 1
HLOC - Home Location Codes
LOC - Location Codes
NPA - Area Code
NXX - Central Office Codes
SPN - Special Numbers
NSC - Network Speed Call
AC2 - Access Code 2
Ready

Each customer folder expands to show a list of ESN object manager icons. Each icon represents a specific type of ESN data or object, such as Digit Manipulation Indexes (DMI). To display or hide the ESN application list, double-click the customer folder icon, or single-click the plus sign [+] or minus sign [-].

Using ESN ART

Editing ESN data

Procedure 134
Editing ESN data for a customer

1. Double-click the customer's folder. If ESN data has been defined for that customer, a list of ESN object manager icons appears in the tree under the customer. An object manager is a window that contains a list of instances of the particular ESN object (for example, a list of DMI numbers and their attributes).
2. Double-click an ESN object manager icon to view and manage the associated ESN data.

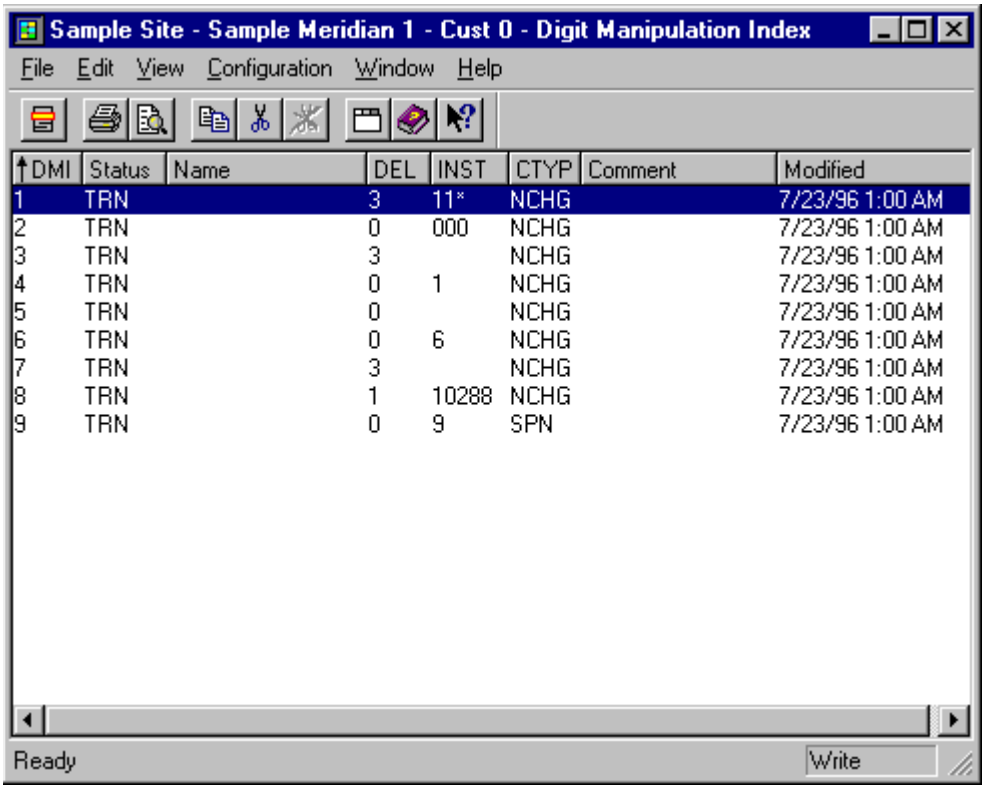
If a customer does not have any ESN data defined on the OTM PC, then the customer folder expands to show the ESN Setup Wizard. This wizard helps you to create the ESN data for the customer. See "ESN Setup Wizard" on page 727.

Working with ESN object managers

The ESN data is made up of many types of objects, such as Route List Indexes (RLI), Digit Manipulation Indexes (DMI), and Location Codes. In a typical ESN installation, most types of objects have many instances (for example, there are several instances of DMI numbers for the DMI object).

ESN ART uses object managers to assist you in viewing and managing all ESN objects. For example, double-click the DMI icon to open the DMI object manager. The DMI object manager provides a list of each DMI number defined for the customer and the values of the various DMI attributes (Figure 323).

Figure 323
ESN object manager window (DMI in this example)


Sample Site - Sample Meridian 1 - Cust 0 - Digit Manipulation Index
File Edit View Configuration Window Help
DMI Status Name DEL INST CTYP Comment Modified
1 TRN 3 11* NCHG 7/23/96 1:00 AM
2 TRN 0 000 NCHG 7/23/96 1:00 AM
3 TRN 3 NCHG 7/23/96 1:00 AM
4 TRN 0 1 NCHG 7/23/96 1:00 AM
5 TRN 0 NCHG 7/23/96 1:00 AM
6 TRN 0 6 NCHG 7/23/96 1:00 AM
7 TRN 3 NCHG 7/23/96 1:00 AM
8 TRN 1 10288 NCHG 7/23/96 1:00 AM
9 TRN 0 9 SPN 7/23/96 1:00 AM
Ready
Write

Each object manager is a separate window (using the standard OTM list control) containing the list of instances of the ESN object. The number and content of the columns varies for each object manager. Typically, there is one column for each property of the object. Most properties correspond to an overlay prompt.

In the example, the DMI list manager shows you the list of all DMI numbers and their attributes. To edit the attributes of a particular DMI number, double-click that line in the list. The property sheet (Figure 324) for that DMI number appears. This is the dialog box that you use to change the values of the DMI feature prompts.

Using object manager features

You can perform the following actions in an object manager:

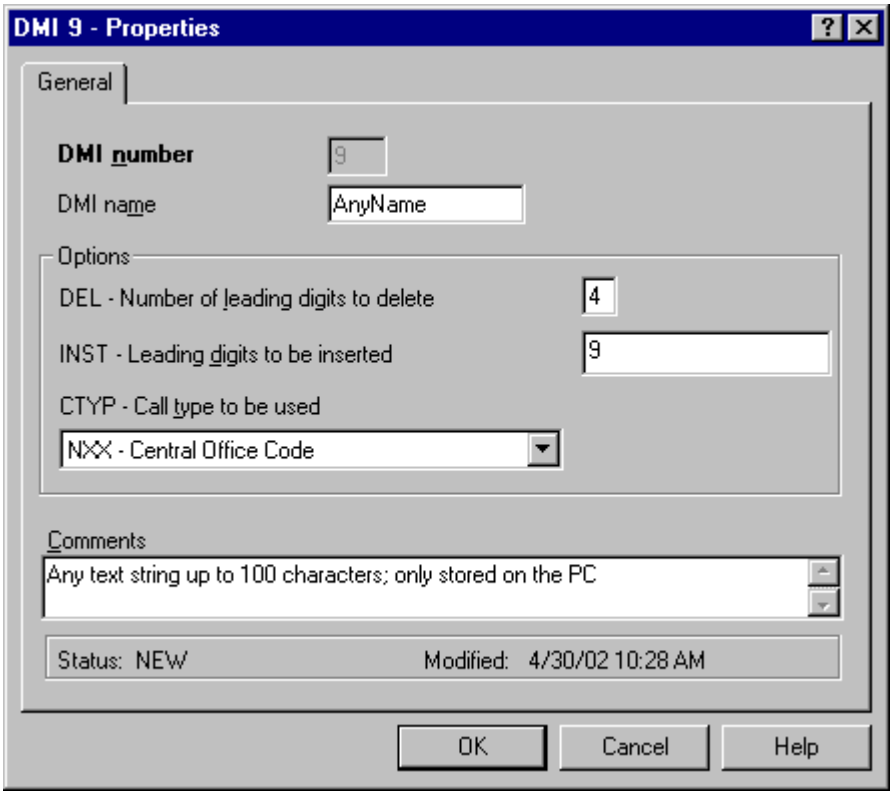
- Double-click an object to view and modify the object's properties.
- Add, change, delete, and undelete the selected objects using the EDIT pull-down or pop-up windows.
- Change the status of selected objects to NEW, TRN, OUT, or CHG using the EDIT pull-down or pop-up windows. Use this function only if the status between the system and the PC is "out-of-sync."
- Click a column title to sort the column. Click again to reverse the order of the sort; an arrow icon in the column title indicates ascending (up arrow) or descending (down arrow) sort.
- Resize the window and columns.
- Use a horizontal scroll bar to see all the columns (if required).
- Select all or some rows, and then perform the following operations:
  - — Copy the text of each selected row to the clipboard.
  - — Delete the selected objects.
- Print all objects using the basic report for the object manager.

Each object manager in ESN ART works as described above. Some object manager windows have more than one list displayed in the window, and some property sheets have more than one tab, but the principal is always the same.

Working with property sheets

Each instance of an ESN object in the object manager's list has an associated property sheet. The property sheet is a dialog box that allows you to modify the ESN data for the object (Figure 324).

Figure 324
ESN property sheet (DMI in this example)



The property sheet contains all attributes of an object. Each attribute typically corresponds to a prompt in an ESN overlay. (If the associated package is not equipped, its controls are disabled in the property sheet.)

The Name and Comments fields are exceptions to this convention. Any information that you enter into these fields is optional, for your reference only, and is saved only in the PC database. This data cannot be transmitted to the system.

Some ESN property sheets have more than one tab. Click a tab to edit the ESN data in that tab.

Property sheet controls

The attributes of an object are represented as Windows controls, such as edit boxes and drop-down list boxes. For example, the Yes/No type of prompts are represented as check boxes. The names of prompts appear next to the controls. Property sheets share the following controls:

- The appearance of the property sheet for adding a new object is different from the appearance when changing an object. The title bar is different and the object ID (for example, DMI number) is disabled when you are changing an object.

  You must delete an object and re-add it to change the object ID.

- Edit boxes are used for Object IDs and names; multi-line edit boxes are used for the Comments field and some repeating data, such as lists of allowed dialed digits. Mandatory edit boxes have bold label text. Optional edit boxes typically have a default value. Edit boxes have a tool tip pop-up which describes the allowed values (for example, “Enter a value between 1 and 32”).
- Check boxes represent the Yes/No type of prompts, where selected means Yes.
- Drop-down list boxes present a list of choices. These correspond to prompts with multiple responses. You can type the first letter to make a selection. The text in drop-down list boxes includes the actual prompt response followed by a short description. For example:
  - NPA: Area Code
  - NXX: Central Office Code
- Each control has an associated Help description. Click a control, and then press <F1> for help on the selected control. This appears the description on the associated prompt in the I/O guide Help.
- Most ESN objects also have a Last Modified date field and a Synchronization Status field. These fields appear as read-only text in the property sheet. The Status field can have the following values in OTM:
  - NEW: added on the PC but not on the system. Deleting a new object removes it from the list because this change does not need to be synchronized to the system. Changing a New object only changes the Modified timestamp (that is, it is still New until synchronized with the system). See “Synchronizing the OTM ESN database and the system” on page 717.
  - TRN: The object has been synchronized with the system. The object has been successfully transmitted to or retrieved from the system.
  - CHG: The object has been changed on the PC but not on the system.

— OUT: The object has been deleted on the PC but not on the system. The object remains on the PC until successfully removed from the system.

The initial state of all objects after being cloned from another customer is New.

Example

In the DMI example, you may want to change the Call type (CTYP prompt). The following example explains editing the CTYP prompt for a particular DMI:

1. In the DMI list, double-click the DMI instance that you want to change (this opens the property sheet for that DMI).
2. Move to the CTYP list box, and select a new value from the list of appropriate values.
3. Click OK. The data is stored in the OTM database ready for transmission to the system. (You can click Cancel to close the property sheet without changing the ESN data.)
4. Later, when you synchronize the data between OTM and the system, this change is made in the system's ESN data. See "Synchronizing the OTM ESN database and the system" on page 717.

This document does not cover the details of each object type because each object manager and property sheet is designed to be fully documented in the online Help. You can also request What's This? Help for any field or button while using ESN ART.

Shortcuts

To open a property sheet for an object, you can double-click the object in the list in the object manager window. Alternately, right-click the object to open the pop-up window, and select Properties to open the property sheet for that object.

The right mouse-button opens a pop-up window that allows you to add, delete, and undelete an object, open the object's property sheet, and get Help on the object.

Defining ESN properties

Some ESN data is defined once per customer. The ESN Properties property sheet allows you to configure this data in a property sheet (no object manager is needed, since there is only one instance of these values for the customer.) To open the ESN Properties property sheet, select ESN Properties from the tree.

The following tabs make up the ESN Properties property sheet:

- General Tab: The General tab contains data from ESN Features sections in LD 86.
- Limits Tab: The Limits tab contains data from ESN options in LD 86.
- TOD Schedules Tab: The TOD Schedules tab contains Time of Day Schedules and Extended TOD schedules from LD 86.
- Network Control Tab: The Network Control tab contains data from ESN Network Control section in LD 87.
- NCOS Map Tab: The NCOS Map tab contains data from Network Class of Service mapping from LD 87.

ESN global change

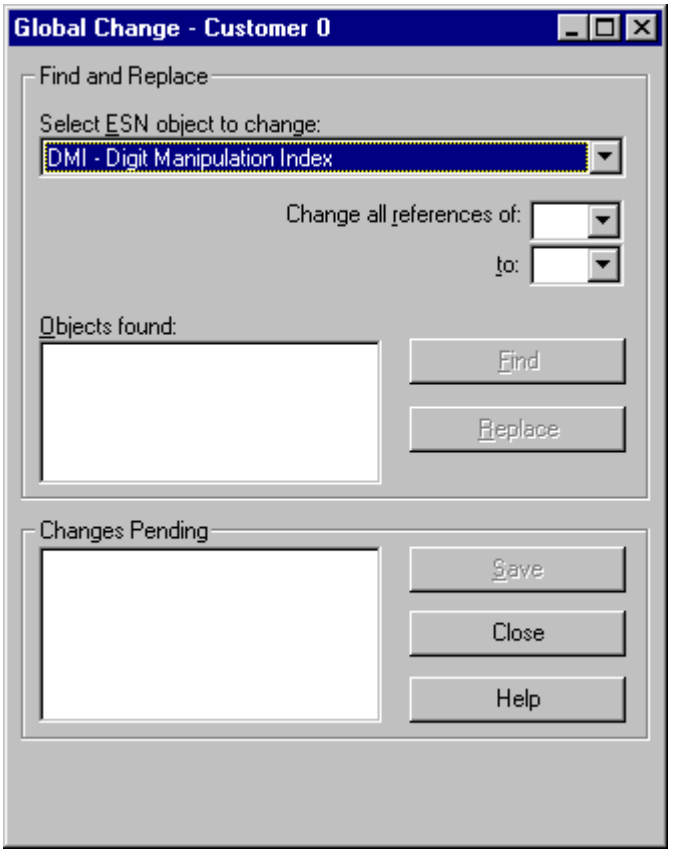
Global change enables you to change all references to DMI, FCAS, FSNI, ITEI, RLI, and ROUT (located within ITEI and RLI) objects.

For example, use global change to find all places where DMI 3 is used, and optionally change it to DMI 11.

Example: Changing references to a DMI

1 Select Global Change in the Configuration menu. The Global Changes window opens (Figure 325).

Figure 325
ESN Global Change window



2 Select DMI in the first list box.

3 Enter the DMI number to be changed and its new number.

4 Click Find. This generates a list of ESN objects using the DMI number. DMIs occur in RLEs, HLOCs, LSCs, NPAs, NXXs, and SPNs.

5 Click Replace. This performs the change in memory and adds the change to the Changes Pending list box. The DMI itself is not changed.

6 Repeat the Find and Replace as desired.

7 Click Save to save the changes. The Save cannot be undone. Click Cancel to close the window without saving the changes.

Synchronizing the OTM ESN database and the system

When you have finished defining the ESN data for a customer, you are ready to transmit the data to the system. Alternately, you may be ready to retrieve data from a system to bring your OTM PC up to date. This is called *synchronizing* the data—guaranteeing that the ESN data in OTM and on the system are "in sync."

Use the Synchronize menu to select Transmit To Meridian 1 or Retrieve From Meridian 1. You have the option of scheduled or immediate transmission or retrieval. You also have the option to view the last transmit or retrieve.

To synchronize data, the TTY port on the Meridian 1 must be configured with a user type of SCH.

Preparing the ESN ART environment for synchronization

Follow these guidelines to assure seamless synchronization:

- The customer data, system software release, and software package information stored in the OTM System Property Sheet must be correct. You can define this data manually in the System Property sheet under the System Data tab, or by using the Update System Data item in the System window.

  Update System Data retrieves the list of customers from the system. This does not include the User ID and password for the customer. Before retrieving or transmitting data, ensure that the correct User ID and password are defined in the OTM System Properties.

- When copying an ESN database, if the release numbers and packages are different between OTM and the system, the ESN data may be impacted as follows:
  - — Data is lost if the package is not enabled on the destination.
  - — Default data is used if the package is not enabled on the source.
- ESN ART does not retrieve LD 16 route data. Transmission errors occur if you enter invalid route numbers.
- Nortel recommends that you validate ESN data before you transmit it to the system.

Validating ESN data

Whenever you transmit ESN data to the system, the ESN ART software automatically examines the data to ensure it is valid. However, it is a good practice to validate the data before transmitting. From the Configuration menu, select Validate ESN Data. The

results of the validation process appear in a log file and also appear in Windows Word Pad.

> ***Note:*** For IP Overlap Signalling, all routes in an RLI block should be either overlap or en bloc. In LD 86, if an en bloc route is configured as an alternate route for an overlap route or vice versa, the warning message SCH1569 appears. Validation process in OTM will not issue this warning message.

Retrieval and transmission

After you have completed the ESN ART environment for synchronization, you can retrieve ESN data from the system, or transmit ESN data to the system.

For more information on primary and secondary databases see "Understanding Primary and Secondary ESN Databases" on page 729.

Synchronization — Retrieval

Follow these steps to retrieve data from the system to Primary ESN database:

Procedure 135
Retrieving data from the system to Primary ESN database

1. Launch the ESN application from the site and system that you want.
2. From the ESN main window, select the customer from whom you want to retrieve the data.
3. Select **File > Synchronize > Retrieve > Now (or Schedule)** from the File menu.

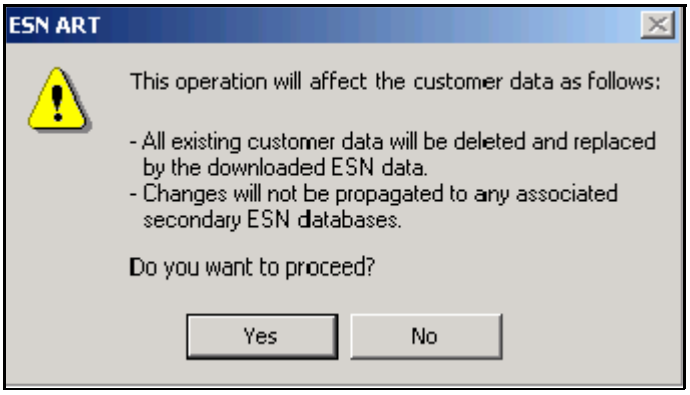
   If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

   The Synchronization application is launched and begins the retrieval process. When the retrieval is done, the Synchronization application disconnects from the system and parses the downloaded ESN data.
4. Select **Update DB** to store the parsed ESN data into the PC database.

   Selection Update DB deletes all existing ESN data for the selected customer before saving the new parsed data.the data base will be updated.

   The Retrieve All overwrites all entries in the database. OTM does not keep track of which entries have been overwritten.
5. If the Retrieve All operation is performed on a Primary ESN database, a ESN Retrieve all warning dialog is displayed (Figure 326). Click **Yes** to proceed. The changes are not propagated to the linked Secondary ESN databases.

Figure 326
ESN Retrieve all warning


ESN ART
This operation will affect the customer data as follows:
- All existing customer data will be deleted and replaced by the downloaded ESN data.
- Changes will not be propagated to any associated secondary ESN databases.
Do you want to proceed?
Yes
No

All of the new data objects have the status TRN after the database has been updated, indicating the data on the PC database and the system is synchronized. The data can now be modified using the list managers and property sheets, and then transmitted back to the system.

End of Procedure

Synchronization - Transmit

Follow these steps to transmit data on the PC database to the system:

Procedure 136
Transmitting data on the PC database to the system

1 Launch the ESN application from the site and system that you want.

2 From the ESN main window, select the customer from whom you want to transmit the data.

The user must schedule transmissions for Primary and each Secondary database separately.

3 Select Synchronize > Transmit > Now (or Schedule) from the File menu.

If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The Synchronization application is launched and begins the transmit process. It begins by loading ESN data for the selected customer and validates all the ESN data objects (on the PC side). The Synchronization application only transmit ESN data objects that have the status OUT, NEW, or CHG. However, not all data objects are transmitted and updated in the same manner. Based on the status and the data objects, they are transmitted to the system differently. Other data objects that have the TRN status are not transmitted to the system. They remain unchanged on the PC database.

ESN data block

The ESN data block is transmitted in a different order when it has the status OUT or NEW. If the ESN data block has the OUT status, it is deleted from the system last because the system does not allow deletion of the ESN data block when there are data remaining in the ESN overlays (LD 86, LD 87, and LD 90). This also means that the Synchronization application must successfully delete (from the system) all ESN data for the selected customer to be able to successfully delete the ESN data block. However, if an error occurs while attempting to delete all the ESN data, the Synchronization application does not attempt to delete the ESN data block from the system.

If the ESN data block has the NEW status, it is transmitted twice. The first time, the NEW response (to an REQ prompt) is used to add the new ESN data block. However, the system does not ask for the NMAP and the ETOD prompts when a NEW response is used, but does so for a CHG response. Therefore, the ESN data block is transmitted a second time using the CHG response to transmit all of the NMAP and ETOD.

CHG status

To change the Sync Status of an entry:

Right-click on an entry, select **Change Status To,** select **NEW, TRN** ,**OUT,** or **CHG**.

The Sync Status of each entry is used only by OTM to keep track of the state of the entry. It's meaning is specific to each individual database and therefore any change in the Sync Status of an entry in the Primary database will not be propagated to the linked Secondary databases.

Based on the prompt groups, the transmit behaves differently for the status CHG. For the simple prompt groups, when their data objects have the status CHG, they are transmitted to the system using the CHG response, which is straightforward. For the special (more complex) prompt groups, they are first deleted from the system using the OUT response, and then added (includes the new changes) back to the system using the NEW response. These special prompt groups include FCI, FSNI, LOC, NPA, NXX, and SPN.

When these data objects are transmitted to the system, they are first deleted from the system, and if the deletion was successful, their status is immediately changed from OUT to NEW. Then they are added back to the system. If that is also successful, their status is immediately changed from NEW to TRN. This way, if the PC loses connection to the system, or if there is a system failure between the delete and the add, then the next transmit adds these prompt groups (with the NEW status) back to the system.

Status updates and transmission errors

During transmission of the ESN data objects to the system, the Synchronization application updates the status of each prompt group accordingly. Table 61 lists synchronization status updates for before and after a successful transmission:

Table 61
Synchronization status updates

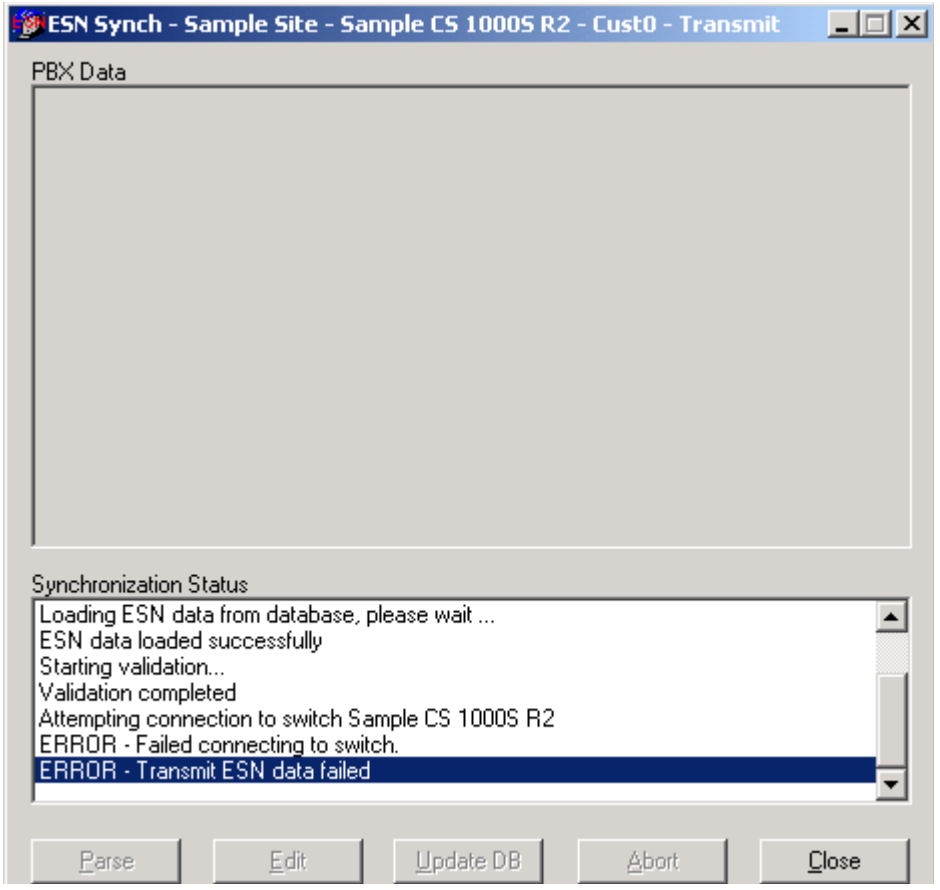
Synchronization status before transmission	ESN data	Synchronization status update on OTM PC after transmission
OUT	All	Remove from database
NEW	All	TRN
CHG	All (except special prompt groups)	TRN
*1. CHG (OUT)	Special prompt groups only	NEW
*2. CHG (NEW)	Special prompt groups only	TRN
* The items indicated by this symbol actually have one status CHG, but they are transmitted in two steps: deleted from Meridian 1 using the OUT response, and added back to the Meridian 1 using the NEW response. For each step completed successfully, the sync status is changed and updated to the PC database.		

If the Synchronization application detects errors during transmission of ESN data, it does not update the status for that data. The status remains unchanged as prior to transmission, and the errors are logged in a file.

Console window

Once synchronization starts, the ESN synchronization console (Figure 327) window appears the interactions between the OTM PC and the Meridian 1 or Communication Server 1000 overlays (LD 86, LD 87, and LD 90).

Figure 327
Synchronization console window


ESN Synch - Sample Site - Sample CS 1000S R2 - Cust0 - Transmit
PBX Data
Synchronization Status
Loading ESN data from database, please wait ...
ESN data loaded successfully
Starting validation...
Validation completed
Attempting connection to switch Sample CS 1000S R2
ERROR - Failed connecting to switch.
ERROR - Transmit ESN data failed
Parse
Edit
Update DB
Abort
Close

The top part of the console window—the Meridian 1 Data section—allows you to view the interactions between the PC and the system. For example, when retrieving ESN data from the system, the printout from the ESN overlays appears in this window.

Synchronization log files

The bottom part of the console window, the Synchronization Status section, lists the errors found during transmission, retrieval, or parse operations. When retrieving the data from the switch, the interactions include many print sequences. This process has the potential to pick up transmission errors or TIMxxx (time messages) generated by the system. All transmission or retrieval information is saved on the OTM PC in the following synchronization files (*XX* represents the customer number):

Nortel\Common Data\[sitename]\[systemname]\
ESN\ESNRetrieve*XX*.dld

Nortel\Common Data\[sitename]\[systemname]\
ESN\ESNTransmit*XX*.log

If you encounter retrieval or transmission problems, you can view the retrieve or transmit log file to find the basis for the errors.

Login log file

The login information in the Console window can help you determine the reasons for login failures. This information is saved in the following login file:

Nortel\Common Data\[sitename]\[systemname]\ESN\SyncLogin.log

Exiting ESN ART or OTM while synchronizing

If you exit the ESN ART application while synchronizing data, the synchronization console stays open to allow synchronization to finish.

If you exit OTM while synchronizing data, a confirmation window lets you know that synchronization is still in progress. You are given the option to abort the synchronization or to allow synchronization to finish. To protect data integrity, Nortel strongly recommends that you allow synchronization to finish normally.

Updating the V&H table

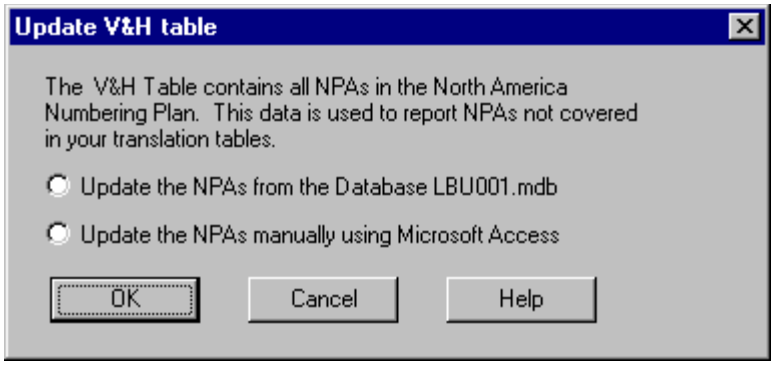
The V&H (Vertical and Horizontal) table contains all North American NPAs and the associated state or province. This information is used by the analysis report, which checks for NPAs not covered in the NPA object manager.

Procedure 137
Updating the V&H table

1 Select **File > Update V&H table** to open the following dialog box (Figure 328), which allows you to:

- Import new NPAs from the Call Accounting rate table disk
- Manually update the NPAs via Microsoft Access

Figure 328
Update V&H table dialog box


Update V&H table
The V&H Table contains all NPAs in the North America Numbering Plan. This data is used to report NPAs not covered in your translation tables.
Update the NPAs from the Database LBU001.mdb
Update the NPAs manually using Microsoft Access
OK
Cancel
Help

Importing NPAs

2 To import NPAs.

a. Select **Update the NPAs from file Database LBU001.mdb** option from the Update V&H table dialog box and the standard File Open dialog box appears.

b. Select **LBU001.mdb file**. ESN ART then reads the NPAs and updates the appropriate datafile. This operation takes approximately one minute. You can click Cancel to close the dialog box without updating the datafile. A backup of the datafile is made in case of a PC crash during the operation. If this occurs, you can try the update again, or rename the old database file (called vhDB.mdb) in the ESN Program folder.

Manually updating NPAs

3 To manualy update NPAs.

a. Select **Update the NPAs manually using Microsoft Access** option from the Update V&H table dialog box, ESN ART simply opens the database file using Microsoft Access.

b. Add, change, or delete NPAs as desired and save the file. This operation fails if the PC does not have Access.

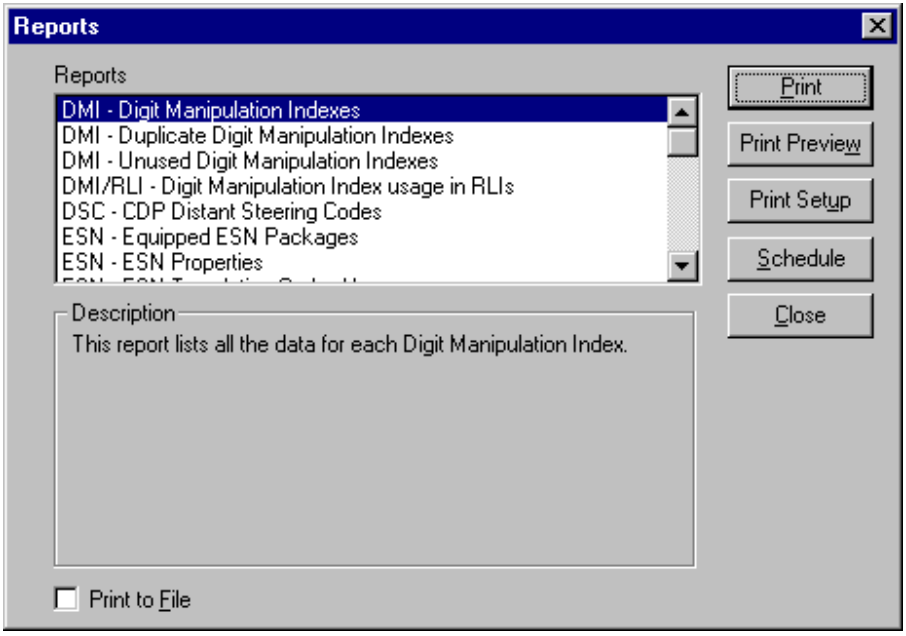
End of Procedure

Printing ESN reports

ESN ART includes many predefined reports to help you in your work.

To open the Reports dialog box, select **File > Reports**. The Reports window (Figure 329) allows you to select one or more reports, configure print settings, and schedule the report(s) for a particular time. You can print more than one Basic report at a time.

Figure 329
Reports window



The following predefined reports are available:

Basic Reports

- DMI - Digit Manipulation Indexes
- DSC - CDP Distant Steering Codes
- ESN - Equiped ESN Packages
- FCAS - Free Calling Area Screening Indexes
- FSNI - Free Special Number Screening Indexes

- HNPA/HLOC- Translation Tables Summary
- ITEI - Incoming Trunk Group Exclusion Indexes
- LOC - Location Codes
- LSC - CDP Local Steering Codes
- NCOS - Network Class of Service
- NPA - Numbering plan Area Codes
- NSCL - Network Speed Call
- NXX - Central Office Translations
- RLI - Route List Index usage in NPAs, NXXs, and SPNs
- SPN - Special Number Translations
- TSC - CDP Trunk Steering Codes

Analysis Reports

- DMI - Duplicate Digit Manipulation Indexes
- DMI - Unused Digit Manipulation Indexes
- DMI/RLI - Digit Manipulation Index usage in RLIs
- ESN - Translation Codes Usage
- NPA - Area Codes not covered in translation tables
- NPA - Area Codes with no associated SDRR codes
- NPA - Invalid Area Codes in FCAS and Translation Tables
- RLI - Route List Index usage in NPAs, NXXs, SPNs
- RLI - Route List Index TOD Schedules

Grouping Reports

- OVL86, OVL87, OVL90
- Special - All ESN specialized reports

Note: The user can enter a partial translation code and retrieve all matching codes that contain the entered value in a printed report using LD 90. This allows the user to find a single translation code or group of translation codes.
The resulting report can be sorted by clicking on a column heading. The sorting algorithm sorts the entries by numerical order.

ESN Setup Wizard

The ESN Setup Wizard helps you to set up the ESN database for a Meridian 1 or Communication Server 1000 customer.To create a database using the ESN Setup Wizard, complete the following procedure:

Procedure 138
Creating a database using the ESN Setup Wizard

1. From the System window, double-click the ESN icon to launch the ESN ART application (Figure 330).
2. Select and double-click customer's folder. The ESN Set Up window appears.
3. Select one of the following methods for creating a database:
   - Copy from an existing ESN ART PC database.
   - Retrieve data from a Meridian 1 or Communication Server 1000 system.
   - Create an empty database.
   - Create a secondary database

Figure 330
ESN Setup Wizard

ESN Setup Wizard - Customer 0
ESN ART
Setup
Wizard
This wizard helps you create the ESN data for a new customer.
Select a method to setup new ESN data:
Setup method
Copy from exisiting PC database
Retrieve data from the PBX
Create an empty database
Create a secondary database
< Back
Next >
Cancel
Help

4 Click **Next**. The second window page appears. This window page appears information on one of the following methods that you chose in the first page:

End of Procedure

Copy from an existing ESN ART PC database

This option appears a tree with all sites, system, and customers with a PC-based ESN database. Select the customer with the data that you want to copy, and then click Finish. This creates the ESN database for the customer. All ESN objects are given a status of New. You can then modify the data, such as changing the Home Area Code, and then transmit the data to the system using the Transmit Now or Scheduled option in the File Menu.

When copying an ESN database, if the X11 release and packages are different between OTM and the system, the ESN data may be impacted as follows:

- Data is lost if the package is not enabled on the destination.
- Default data is used if the package is not enabled on the source.

Retrieve data from the PBX

This option retrieves the ESN data from the system. This is the same as using the Retrieve Now or Schedule option in the File menu.

Create empty database

This option creates an empty database. Before the database is created, you must fill in the mandatory fields (such as the Home Area Code) in the ESN Properties.

Create a secondary database

This option enables you to create a secondary database copied from an existing database. See the next section “Understanding Primary and Secondary ESN Databases” for details.

The ESN Setup Wizard is designed to be documented fully in the online Help. If you have any questions while using the Wizard, click Help. You can also request What’s This? Help for any field or button.

Understanding Primary and Secondary ESN Databases

The concept of Primary and Secondary relationship is introduced to allow changes made to one ESN database (Primary) to be automatically propagated to one or more linked databases (Secondary).

The Primary and Secondary databases have a one-to-many relationship.

Important

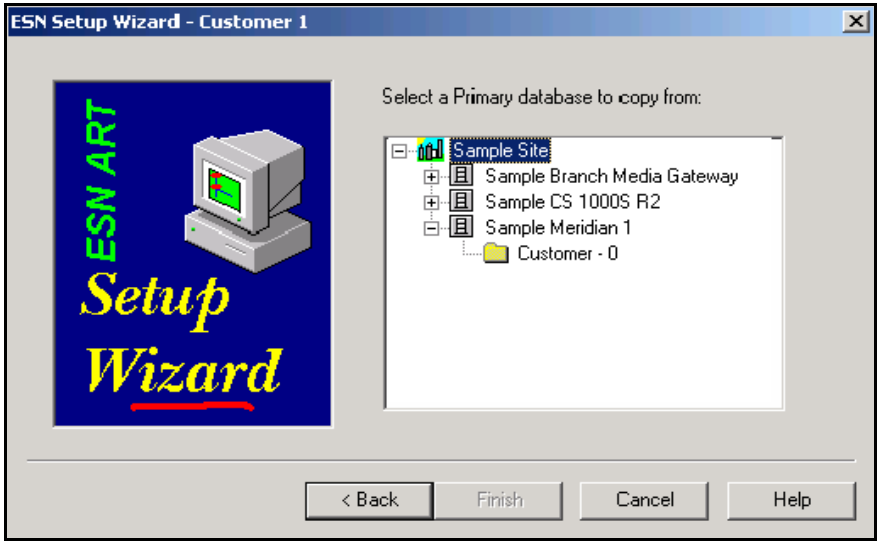
- The use of this feature is recommended only for ESN databases that have the same X11 releases and software packages.
- The propagation mechanism is not capable of performing validation on the secondary database. It is highly recommended that this feature be used only on systems where the numbering plan on the Primary and Secondary ESN databases are identical.
- If the preceeding assumptions are false, it is up to the craftsperson to ensure that data in the Secondary ESN database does not cause transmission failure.
- Should the Primary and Secondary ESN databases become out of sync, the recommending procedure for synchronizing Primary and Secondary is to delete the Secondary ESN database, transmit the changes to the Communication Server, then re-add the Secondary ESN database.

Adding a Secondary database

Procedure 139
Adding a Secondary database

1 From the ESN Setup Wizard Figure 330 on page 727, select the option to create a secondary database.

Figure 331
Adding a Secondary database



2 From the existing databases (Figure 331), select a primary database to copy and click **Finish**. The following occurs:

- A Secondary database is created that is an exact duplicate of the Primary database.
- A link is created from the Primary to the Secondary database.
- The Secondary database is flagged as a "Secondary" database.

Note: The list of databases shown in the displayed window (Figure 11) do not contain databases flagged as "Secondary". This prevents daisy-chaining of Primary to Secondary databases.

End of Procedure

Deleting databases

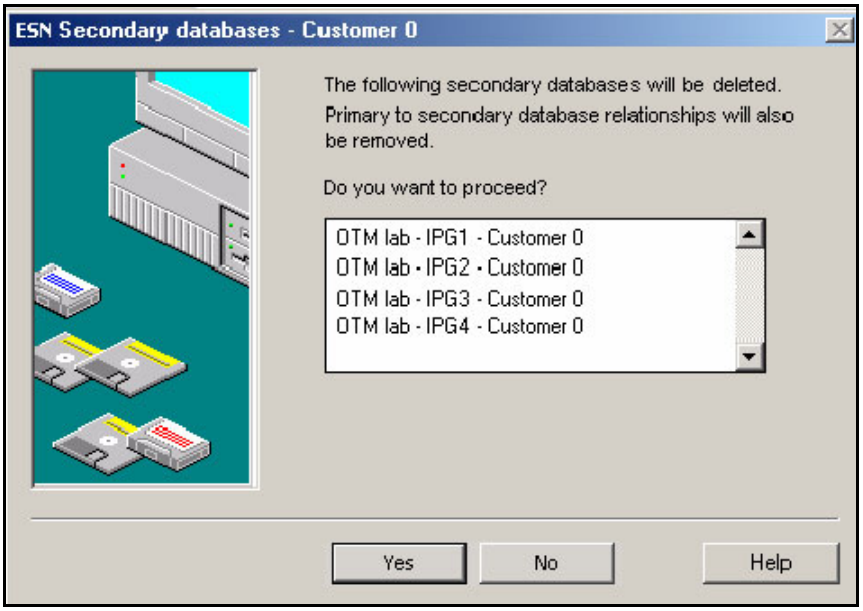
Deleting a Primary database

When deleting a Primary database, all linked Secondary databases are also deleted.

Procedure 140
Deleting a Primary database

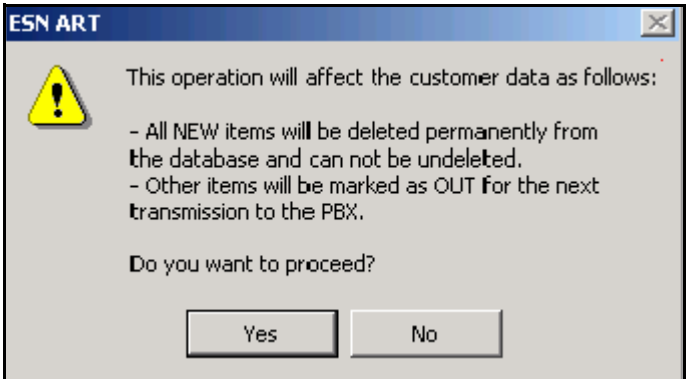
1 The dialog box shown in Figure 332 opens.

Figure 332
First warning dialog


ESN Secondary databases - Customer 0
The following secondary databases will be deleted.
Primary to secondary database relationships will also be removed.
Do you want to proceed?
OTM lab - IPG1 - Customer 0
OTM lab - IPG2 - Customer 0
OTM lab - IPG3 - Customer 0
OTM lab - IPG4 - Customer 0
Yes
No
Help

2 Click **Yes** to continue. A second warning dialog opens.

Figure 333
Second warning dialog


ESN ART
This operation will affect the customer data as follows:
- All NEW items will be deleted permanently from the database and can not be undeleted.
- Other items will be marked as OUT for the next transmission to the PBX.
Do you want to proceed?
Yes
No

3 Click **Yes** to complete deletion.

End of Procedure

Deleting a Secondary database

When only the Secondary ESN database is deleted, the link from Primary to Secondary is not cleared (Table 62). The user has to remove the link to the Secondary database from the Primary database.

Table 62
System with ESN database type deleted

Database Type	Description
Primary ESN database deleted	The table storing the association between Primary and Secondary databases will be deleted along with the system. **Limitation:** The Secondary flag associated with the Secondary database will not be cleared. The database will continue to be tagged as a Secondary but with no Primary. The only way to clear the flag is to delete the Secondary database.
Secondary ESN database deleted	Only the Secondary database is deleted, the Primary – Secondary association in the Primary database is not updated. The Secondary entry has to be manually deleted from the Primary database See “Deleting a Secondary database” on page 733

CAUTION — Service Interruption

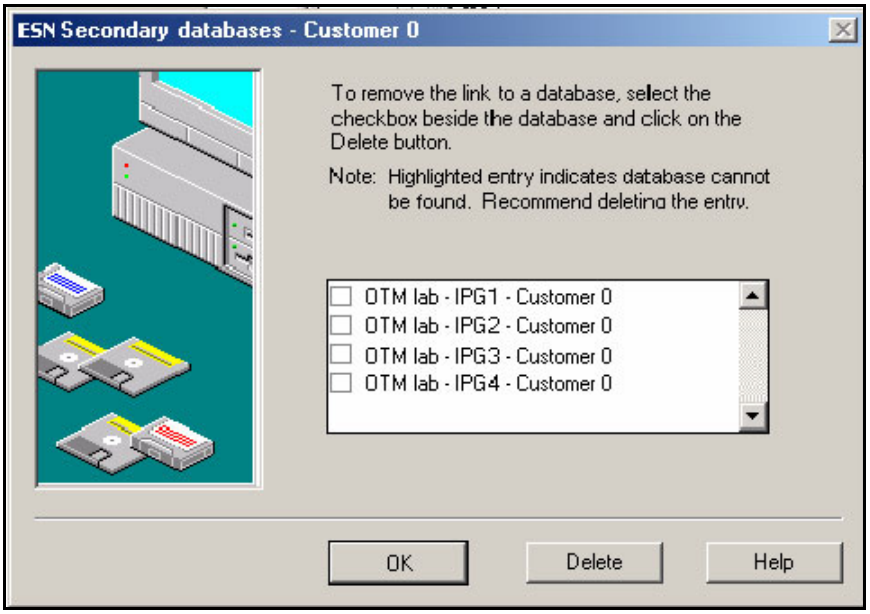
Deletion of a site also deletes all of its systems.

Procedure 141
Deleting a Secondary database

To remove the Secondary link from the Primary database, complete the folowing procedure:

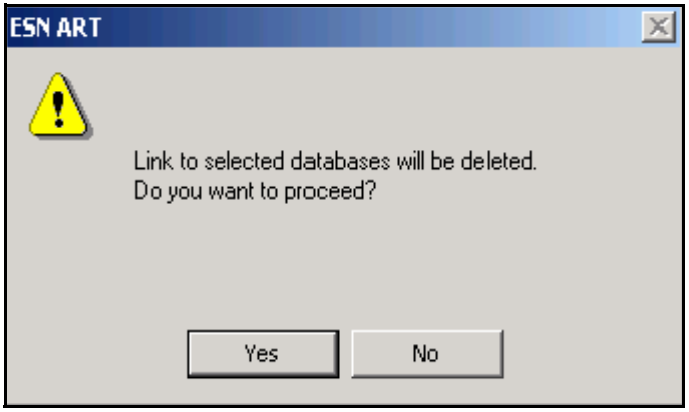
1 From ESN Analysis and Reporting toolbar **Configuration** menu, select and click **View Secondary Databases**. The ESN Secondary databases window appears (Figure 334).

Figure 334
ESN Secondarydatabases


ESN Secondary databases - Customer 0
To remove the link to a database, select the checkbox beside the database and click on the Delete button.
Note: Highlighted entry indicates database cannot be found. Recommend deleting the entry.
OTM lab - IPG1 - Customer 0
OTM lab - IPG2 - Customer 0
OTM lab - IPG3 - Customer 0
OTM lab - IPG4 - Customer 0
OK
Delete
Help

2 From the list, select one or more databases for deletion and click **Delete**. The Secondary Databases Confirmation dialog box appears (Figure 335).

Figure 335
Secondary Databases Confirmation



3 Click **Yes.** The Secondary entry is deleted from the Primary database, and the Secondary flag in the Secondary database is cleared.

***Note*:** The option to **View Secondary Databases** is disabled if the ESN database is flagged as a Secondary.

End of Procedure

Replacing the ESN database

Replacing a Primary or a Secondary ESN database is not allowed, the menu item that launches the ESN Setup Wizard is disabled.

To replace the database, delete the existing database and synchronize with the Communication Server. A new database can then be added.

Changing Databases

Change operations (NEW, CHG, OUT) performed on the Primary ESN database are automatically propagated to all linked Secondary databases.

Modules in the ESN ART application have dependencies to each other that can result in data conflict if certain properties are not set correctly. Table 63 describes the dependencies between the modules.

Table 63
ESN Dependency Matrix

	Depends On															
	ESN	LSC	DSC	TSC	DMI	FCAS	FSNI	ITEI	NCOS	RLI	HLOC	LOC	NPA	NXX	SPN	NSC
ESN																
LSC	X				X											
DSC	X									X						
TSC	X									X						
DMI	X															
FCAS	X															
FSNI	X															
ITEI	X															
NCOS																
RLI	X				X	X	X									
HLOC					X											
LOC	X									X						
NPA								X		X						
NXX								X		X						
SPN								X		X						
NSC																

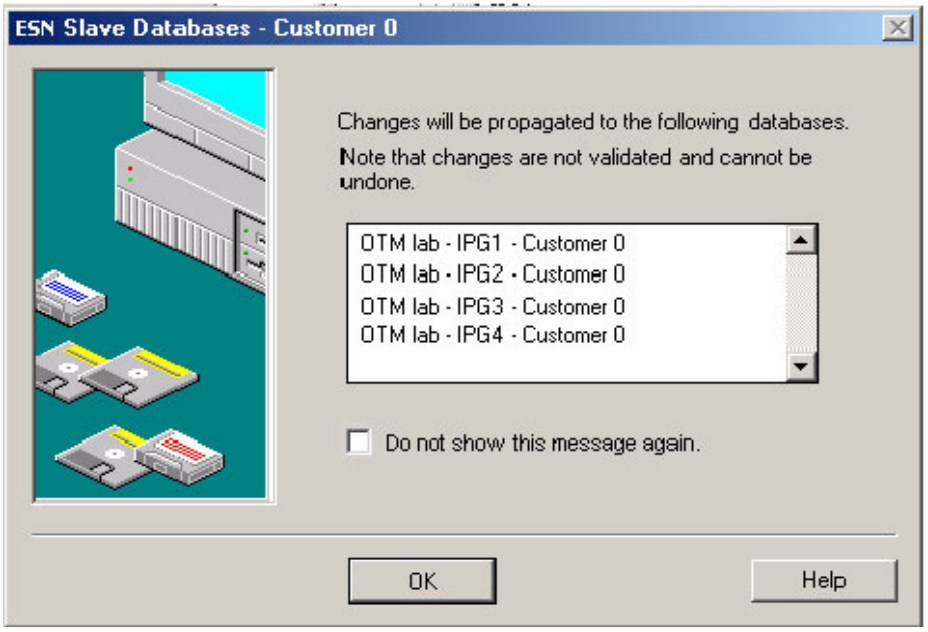
Changing primary databases

To ensure changes in the Primary ESN database are propagated to the Secondary ESN databases complete the following procedure:

Procedure 142
Changing primary databases

1 Make a change in the Primary ESN database and click **OK** to save the change (Figure 336).

Figure 336
ESN Slave Database


ESN Slave Databases - Customer 0
Changes will be propagated to the following databases.
Note that changes are not validated and cannot be undone.
OTM lab - IPG1 - Customer 0
OTM lab - IPG2 - Customer 0
OTM lab - IPG3 - Customer 0
OTM lab - IPG4 - Customer 0
Do not show this message again.
OK
Help

2 Choose one of the following

a. Select **OK** to propagate changes in the Primary Database to the Secondary ESN databases.

An “INFO” message is logged if successfully propagated.

b. Select“**Do not show this message again**” to disable the display.

This checkbox setting clears once the main ESN application is closed. The checkbox setting persists only while the ESN application is open.

End of Procedure

Changing secondary databases

Changes in the Primary database may overwrite changes in the Secondary database. The warning shown in Figure 337 appears prior to any change being committed to the Secondary database for all modules.

Figure 337
Secondary Database warning

ESN ART
This is a Secondary database.
Changes may be overwritten by changes done on the Primary database.
OK
Do not show this message again.

Procedure 143
Changing secondary databases

Choose one of the following

1 Select **OK** to enable changes to the Secondary ESN databases.

2 Select"**Do not show this message again**" to disable the display.

This checkbox setting clears once the main ESN application is closed. The checkbox setting persists only while the ESN application is open.

End of Procedure

Global Change

Updates made to the Primary database using Global change will not be propagated to the linked Secondary databases.

If there are linked Secondary databases detected prior to committing the change a warning dialog appears.

Figure 338
Global change warning

Choose one of the following

1 Select **Yes** to enable changes to the Primary ESN database.

2 Select **No** to cancel changes to the Primary ESN database.

End of Procedure

Abnormal Conditions

The following table lists the possible abnormal conditions that might occur and the associated action.

Table 64
Abnormal conditions (Part 1 of 2)

Abnormal Condtions	Action
When creating a Secondary database, Primary database selected is locked.	Warning dialog appears. Close all property sheets and then click **OK** to proceed. Or click **Cancel** to abort the operation. Warning message logged to Event Log Viewer.
When propagating changes to Secondary database, Secondary database is locked.	Warning dialog appears. Close all property sheets and then click **OK** to proceed. Or click **Cancel** to abort the operation. Warning message logged to Event Log Viewer.

Table 64
Abnormal conditions (Part 2 of 2)

Abnormal Condtions	Action
When propagating changes to Secondary database, Secondary database cannot be found.	Warning dialog appears. Database will be skipped. Warning message logged to Event Log Viewer.
Changes to the Secondary database causes data conflict and transmission fails.	Manually update the Secondary database prior to transmission.
Any other error condition that prevents the changes from being propagated to the Secondary database.	An error message will be logged to Event Log Viewer.

ESN ART software dependencies

Table 65 shows all object managers in the ESN window tree. Some items appear only if the associated software package is equipped on the system. The system must have the multi-customer package for the customer folders to appear.

Table 65
X11 packages required for the ESN ART object managers (Part 1 of 2)

ESN object manager	Software package
Customer x - Customer Name	cust
ESN Features and Network Control	bars/nars
CDP - Coordinated Dialing Plan	cdp
• LSC - Local Steering Codes	cdp
• DSC - Distant Steering Codes	cdp
• TSC - Trunk Steering Codes	cdp
DMI - Digit Manipulation Index	bars/nars
FCAS - Free Calling Area Screening Index	bars/nars
FNSI - Free Special Number Screening Index	fnp
ITEI - Incoming Trunk Group Exclusion Index	bars/nars
NCOS - Network Class of Service	ncos
RLI - Route List Index	bars/nars

Table 65
X11 packages required for the ESN ART object managers (Part 2 of 2)

ESN object manager	Software package
Translation Tables	bars/nars
• HNPA/HLOC - Home NPA and Location Codes	bars/nars
• LOC - Location Codes	bars/nars
• NPA - Area Codes	bars/nars
• NXX - Central Office Codes	bars/nars
• SPN - Special Numbers	bars/nars
• NSCL - Network Speed Call	nars

Section 3
Web Navigator

Contents

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Equipment 747
Web Station 797
Web Administration 843

Using Web Navigator

Overview

Two categories of users to login to the Web Navigator:

- Administrators — The OTM administrator has the responsibility of installing, configuring, and maintaining OTM Web Services
- EndUser — OTM end users

Desktop Services is an end-user application that provides web pages that display the configuration of the user's telephone as well as provide telephone troubleshooting and feature information. With appropriate permissions, the end user is also provided with the ability to change keys and features. Access to the OTM Web Navigator utilizes the users and groups functionality in Windows. User authentication can also be accomplished using Windows domain accounts or LDAP. Domain accounts and LDAP authentication are normally used for EndUsers who will be accessing web Desktop Services to administer their telephones.

For more information refer to the *Optivity Telephony Manager Desktop User Guide (*P0609276).

Equipment

The Equipment heading in the OTM Web navigator tree provides links to the OTM Status page, the web-based System Navigator, and the Alarm browser.

Web Station

The Web Station heading in the OTM Web Navigator tree provides links to the Telephones pages, the Directory Update page, Telecom Billing Reports page, and the Sync Tasks and Logs page.

Telecom Billing System (TBS)

Provides applications and management for the Telecom Billing System. See *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331) for complete instructions.

Web Administration

The Web Administration heading in the OTM Web navigator tree provides links to Custom Help pages, the User Authentication page, the User Groups page and Java-based User Properties application, the Session Monitor page, and the Language Selection page.

Login

1 Set up Login and Password for the system.

To access Web Maintenance, the administrator must set up Login and Password for the selected system in windows see “Login process” in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

2 Navigate to the administrator login page.

Default URL: The default OTM URL is the end user login page, go to http://<hostname of OTM server>/admin.

Figure 339 shows the OTM Navigator Administator Login page. If the login is successful, a blank OTM web home page appears Figure 343. If login is denied, an error message appears.

3 Attach Dongle if needed.

The dongle on the OTM Server is checked each time a user attempts to launch an OTM Web application. If the user login fails because the dongle is missing, the message “Login failed because the OTM Server is missing the required security device” appears.

The Equipment heading in the OTM Web navigator tree provides links to the OTMStatus page, the web-based System Navigator, and the Alarm browser.

4 Install Java plug-in if needed.

When Web Navigator users first point a browser to the OTM Navigator website, a check is performed to see if the user has the required OTM Java plug-in. If the plug-in is not installed, the administrator or Help desk user is given the option of downloading and installing the plug-in. This operation is similar to the standard download operations in that the user must download the plug-in to their hard disk then it self installs onto the machine.

While the plug-in check is being performed, the OTM splash screen appears. If the plug-in is installed, or after installation of the plug-in, the user is taken to the login page.

Figure 339
OTM Navigator Administrator Login page

Equipment

OTM Status

The OTM current status page is shown in Figure 340. As the administrator, you can access this page at any time by clicking Home.

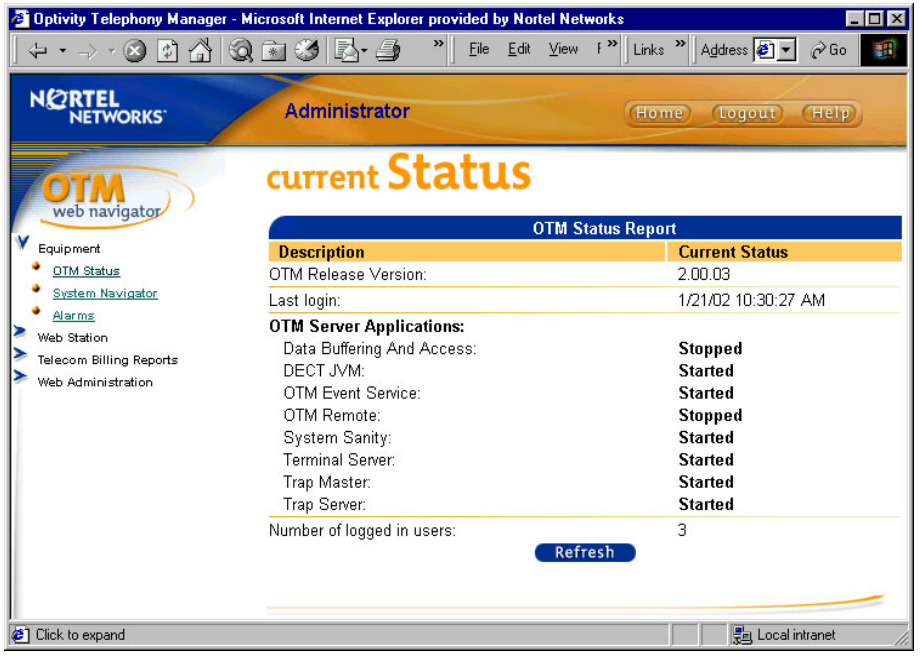
The OTM Status page contains:

- Release version of the OTM software
- Last login date and time
- Real time status of OTM Server applications:
  - Started
  - Running
  - Not Responding

— Stopped

- Number of logged in users

Figure 340
OTM Status page



System Navigator

The OTM System Navigator page shows the names and types of all systems available to the current user, and allows you to group the systems into sites for more convenient access. Once grouped, the systems can be viewed by site as shown in the example of the OTM System Navigator in Figure 341, or by gatekeeper zone as shown in Figure 342. The sites, systems, and applications shown are dependent on the software packages installed, your security access permissions, and the type of system device you select.

The gatekeepers only appear in the Gatekeepers Zones view. Although primarily used for CS 1000 systems, Meridian 1 systems can be assigned to a gatekeeper zone. This functionality is intended for Meridian 1 systems that are equipped with IP Line/ IP Trunk applications that support gatekeeper operation.

In the Sites view, Media Gateways appear in the tree under their associated site, as well as under the heading Media Gateways beneath the appropriate system. Under the Media Gateways heading, the Media Gateway name is composed of the Site name and the system name. If the Call Server and Media Gateway are in the same site, the Media Gateway only appears under the Media Gateways heading of the associated system.

In the Gatekeeper Zones view, Media Gateways only appear beneath the Media Gateways heading of the associated system.

In the Sites view, Survivable IP Expansion cabinets appear in the tree under their associated site, as well as under the heading Survivable Cabinets beneath the appropriate Nortel Meridian 1 PBX 11C - Cabinet. If the main cabinet and Survivable IP Expansion cabinet are in the same site, the Survivable IP Expansion cabinet only appears under the Survivable Cabinets heading of the associated Nortel Meridian 1 PBX 11C - Cabinet system.

In the Gatekeeper Zones view, Survivable IP Expansion Cabinets only appear beneath the Survivable cabinets heading of the associated Nortel Meridian 1 PBX 11C - Cabinet system.

OTM does not display the survivable status of Media Gateways and Survivable IP Expansion cabinets.

Figure 341
OTM Web Navigator—Sites view

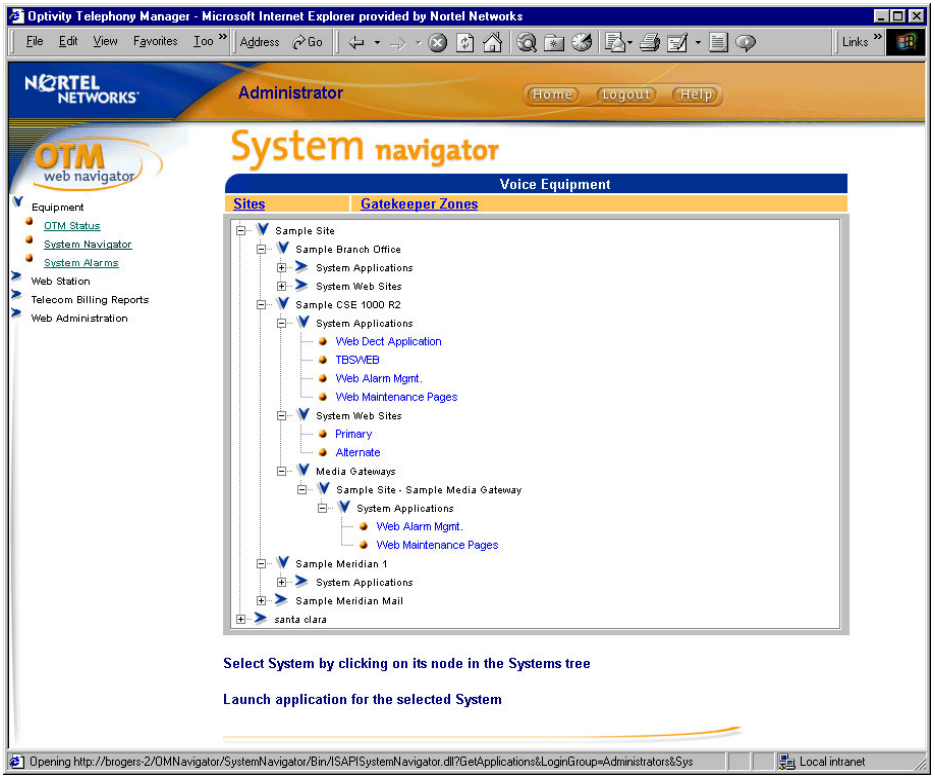
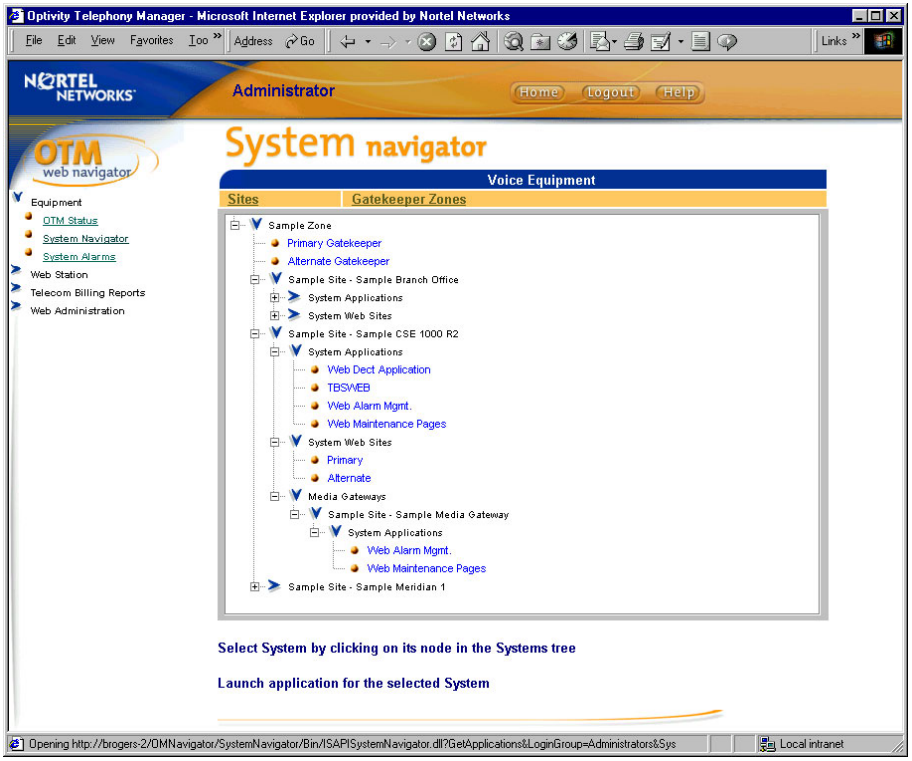


Figure 342
OTM Web Navigator—Gatekeeper Zones view



The OTM Web Navigator allows you to do the following:

- Display a “tree” structure for the Gatekeeper Zones on the network that you manage. Access systems in a particular zone by opening the zone.
- Display a “tree” structure for the Sites and Systems on the network that you manage. Access systems at a site by opening that site.
- Launch web applications such as Maintenance Pages and the Alarm Browser.

Web DECT Application

Launches the Digital Enhanced Cordless Telecommunications (DECT) system management tool. The DECT product is not distributed in North America. See *DECT: Description, Planning, Installation, and Operation* (553-3001-370).

TBSWEB

Provides access to the Telecom Billing System Web Reporting application. see *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331).

Web system alarm management

The Alarm browser page contains a list of alarms received by the Alarm Manager Service running on the OTM Server. The list contains alarms and events from multiple systems and devices. You can perform the following actions:

- Sort the alarms by clicking on a column header.
- Resize the columns.
- Filter the list via the Show check boxes.
- Page through the list via the First/Last/Next/Previous buttons, or use the Page drop-down list to jump to a particular page.
- Set the auto refresh interval.
- Double-click an alarm for help.
- Single-click an alarm to view full alarm details in the Alarm details pane.

Access to the Alarm browser page is controlled at the Web Navigator level for each User Group. The users in the User Group either have access to the alarms for all monitored devices, or no access to alarms.

Log in to the Alarm Browser

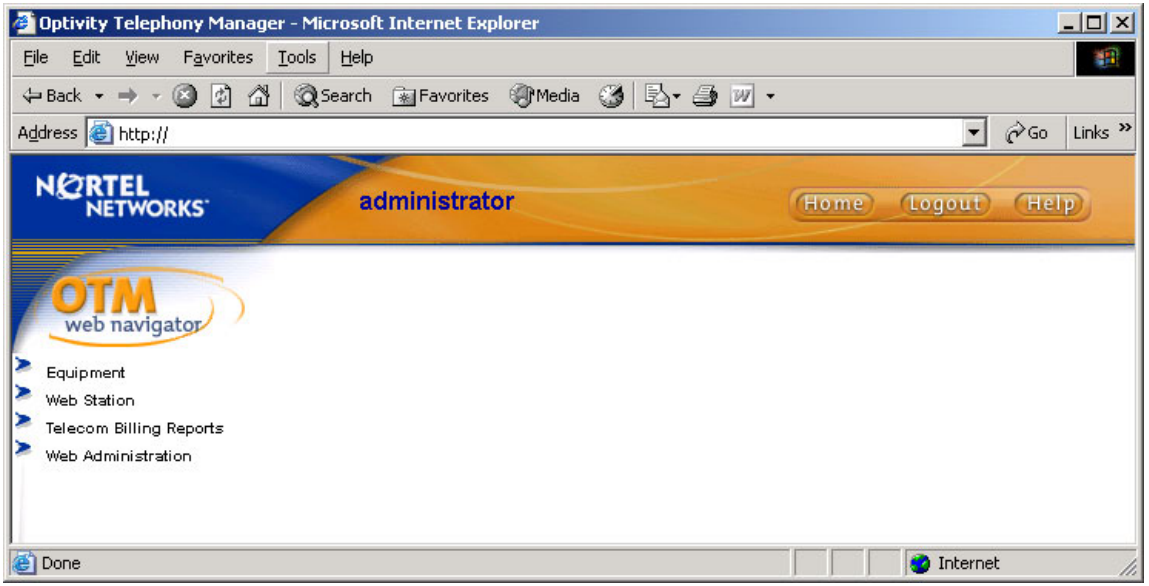
Procedure 144
Logging in to the Alarm Browser

To view the alarms for all systems monitored by OTM:

1 Log in to OTM from the Administrator Login page.

The screen in Figure 343 displays.

Figure 343
Home page



2 Select **Equipment > System Alarms**.

The Alarm Browser page opens (Figure 344). This page displays the alarms for all systems monitored by OTM.

End of Procedure

Procedure 145
Viewing the alarms for a single system

To view the alarms for a single system monitored by OTM:

1 Log in to OTM from the Administrator Login page.

The screen in Figure 343 displays.

2 Select **Equipment > System Navigator**.

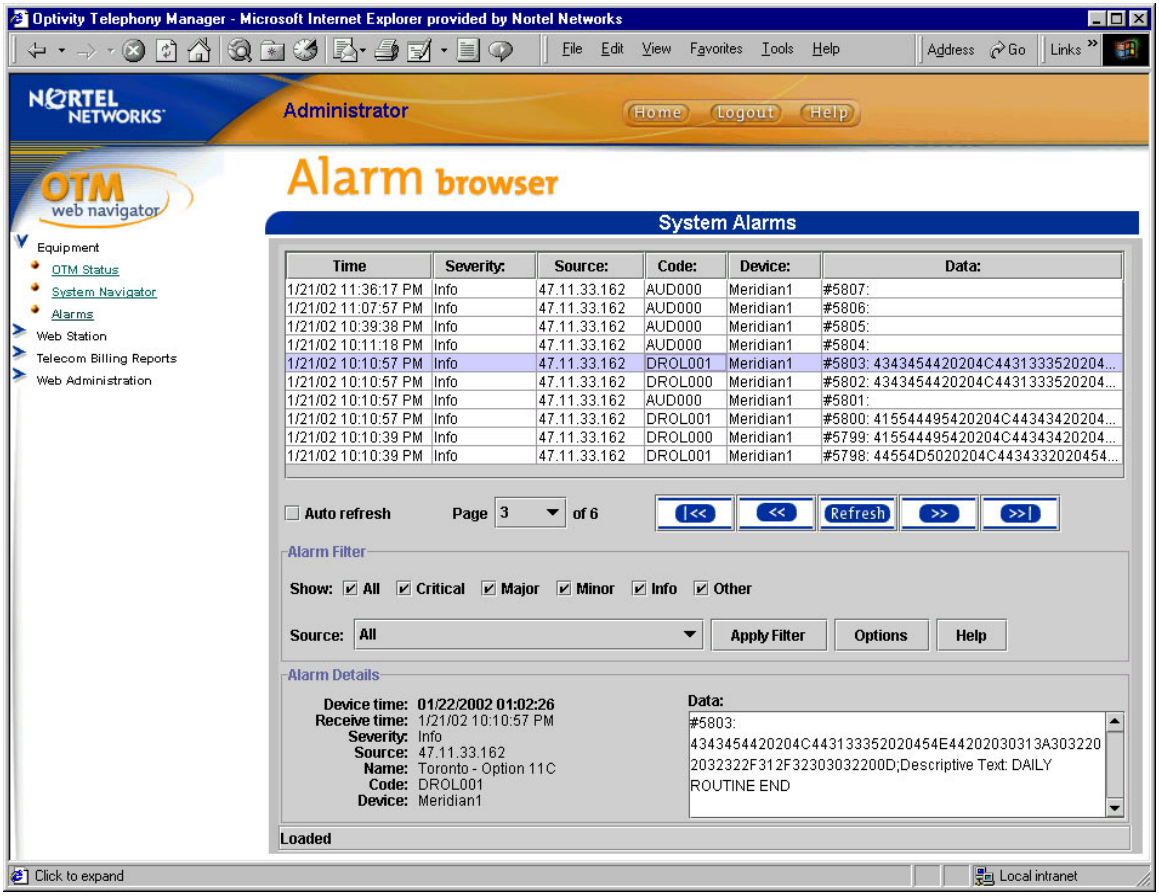
The System Navigator page opens. This page displays the systems managed by OTM.

3 Select the system for which you want to view alarms.

4 Select **System Applications > Web Alarms Mgmt**.

The Alarm Browser page opens (Figure 344). This page displays the alarms for the selected system.

Figure 344
Alarm Browser page


Optivity Telephony Manager - Microsoft Internet Explorer provided by Nortel Networks
File Edit View Favorites Tools Help
Address Go Links
NORTEL NETWORKS
Administrator
Home Logout Help
OTM web navigator
Alarm browser
Equipment
OTM Status
System Navigator
Alarms
Web Station
Telecom Billing Reports
Web Administration
System Alarms
Time | Severity: | Source: | Code: | Device: | Data:
1/21/02 11:36:17 PM | Info | 47.11.33.162 | AUD000 | Meridian1 | #5807:
1/21/02 11:07:57 PM | Info | 47.11.33.162 | AUD000 | Meridian1 | #5806:
1/21/02 10:39:38 PM | Info | 47.11.33.162 | AUD000 | Meridian1 | #5805:
1/21/02 10:11:18 PM | Info | 47.11.33.162 | AUD000 | Meridian1 | #5804:
1/21/02 10:10:57 PM | Info | 47.11.33.162 | DROL001 | Meridian1 | #5803: 4343454420204C4431333520204...
1/21/02 10:10:57 PM | Info | 47.11.33.162 | DROL000 | Meridian1 | #5802: 4343454420204C4431333520204...
1/21/02 10:10:57 PM | Info | 47.11.33.162 | AUD000 | Meridian1 | #5801:
1/21/02 10:10:57 PM | Info | 47.11.33.162 | DROL001 | Meridian1 | #5800: 41554449542020 4C44343420204...
1/21/02 10:10:39 PM | Info | 47.11.33.162 | DROL000 | Meridian1 | #5799: 41554449542020 4C44343420204...
1/21/02 10:10:39 PM | Info | 47.11.33.162 | DROL001 | Meridian1 | #5798: 44554D5020204C4434332020454...
Auto refresh
Page 3 of 6
|<< << Refresh >> >>|
Alarm Filter
Show: All Critical Major Minor Info Other
Source: All
Apply Filter Options Help
Alarm Details
Device time: 01/22/2002 01:02:26
Receive time: 1/21/02 10:10:57 PM
Severity: Info
Source: 47.11.33.162
Name: Toronto - Option 11C
Code: DROL001
Device: Meridian1
Data:
#5803:
4343454420204C44313335202045 4E44202030313A303220
2032322F312F32303032200D;Descriptive Text: DAILY
ROUTINE END
Loaded
Click to expand
Local intranet

You can perform the following actions within the Alarm Browser page:

- Filter the list based on severity and system.
- Page through the list.
- Sort the alarms.

- Resize a column to see more information.
- View Help on an alarm.

End of Procedure

The list of alarms is not dynamic. Use the OTM Alarm Browser Options dialog box Figure 345 on page 756 to set the auto refresh interval and select the number of alarms to be displayed on each page.

System Alarms table

The System Alarms table in the Alarm Browser page (Figure 344) displays six fields associated with each alarm entry. These fields are Time (received), Severity, Source, Code, Device, and Data. Click the appropriate column heading to sort the entries by the field of your choice. Double-click the alarm entry to display online Help for the alarm.

Alarm Filter pane

Use the Alarm Filter pane in the Alarm Browser page (Figure 344) to select alarm severity, monitored system, and to set Alarm Browser options.

Select alarm severity and monitored system

Use the Show check boxes to select the severity of the alarms that are to be retrieved from the OTM Server. You may select the All check box or any combination of the other five check boxes.

Use the Source drop-down list to select the system to be monitored. You may select All to view alarms from all systems, including all the devices configured in the *Devices.txt* file.

The default selections are all systems and all alarms.

When the status of a check box is changed or a new selection is made from the Source drop-down list, the change is reflected in the next auto refresh or when the Refresh or Apply Filter buttons are clicked. The Refresh and Apply Filter buttons initiate a new retrieval and reset the polling timer.

Set Alarm Browser options

Procedure 146
Setting Alarm Browser options

1 Click **Options** in the Alarm Filter pane.

The Alarm Browser Options dialog box opens (Figure 345).

Figure 345
Alarm Browser Options dialog box

2 From the drop-down list, select a refresh interval between 3 minutes and 10 minutes. The default value is 3 minutes.

The Auto refresh check box in the System Alarms pane of the Alarm Browser page must be selected for auto refresh to occur.

3 Enter the number of alarms you want OTM to display on each alarm browser page in the Alarms per page box. The number must be in the range 10–100. The default value is 10 alarms per page.

4 Click **OK**.

5 The settings in the Alarm Browser Options dialog box and the Alarm Filter pane are temporary. These settings revert to the default values when the browser is closed and reopened.

End of Procedure

Alarm details

When an alarm entry is selected, the alarm information and data associated with the alarm appear in the Alarm details pane of the Alarm Browser page (Figure 344).

The left side of the Alarm details pane displays the complete information for the selected alarm.

The Operator data box contains all other data for the selected alarm. In addition to operator data, this box may include expert data and sequence number.

The Additional Information data box contains other miscellaneous information specific to the device.

Status bar

The status bar at the bottom of the Alarm Browser page provides a visual indication that new alarms are being retrieved from the OTM Server.

To view information about the menus, toolbar, column headings, and other functions available on the Alarm browser page, use Help.

Virtual System Terminal

To enable the Web Virtual System Terminal you must configure Terminal Servers, see "Setting up a virtual terminal", *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

The Web Virtual System Terminal provides a single point of connectivity for a web-based terminal window. Launch the OTM Web Navigator from Internet Explorer or Netscape Navigator, and select the system to connect to from the GUI. This does not require knowledge of such items as IP addresses and serial port settings because the information is stored on the server. You determine who gets access to what, and you can change the settings without interrupting everyday operation.

IMPORTANT!

Web Virtual System Terminal does not support connection to Meridian Mail regardless of the type of communications profile (serial/PPP/Ethernet).

The OTM server connects to devices over IP network and serial ports on the OTM server. Web Virtual System Terminal supports connection primarily to a system via:

- Meridian 1 or CS 1000 system pseudo-TTY (PTY) port

- Direct serial connection
- Telnet

The Web Virtual System Terminal resembles the OTM Windows System Terminal application. When you connect to a system, it provides similar context-sensitive Help for the overlays and error messages. When you connect to other devices, it provides a basic Telnet connection. The Web Virtual System Terminal is a Java applet embedded in an HTML page. Once connected to the Terminal Server, the Web Virtual System Terminal communicates with the selected device through the Terminal Server.

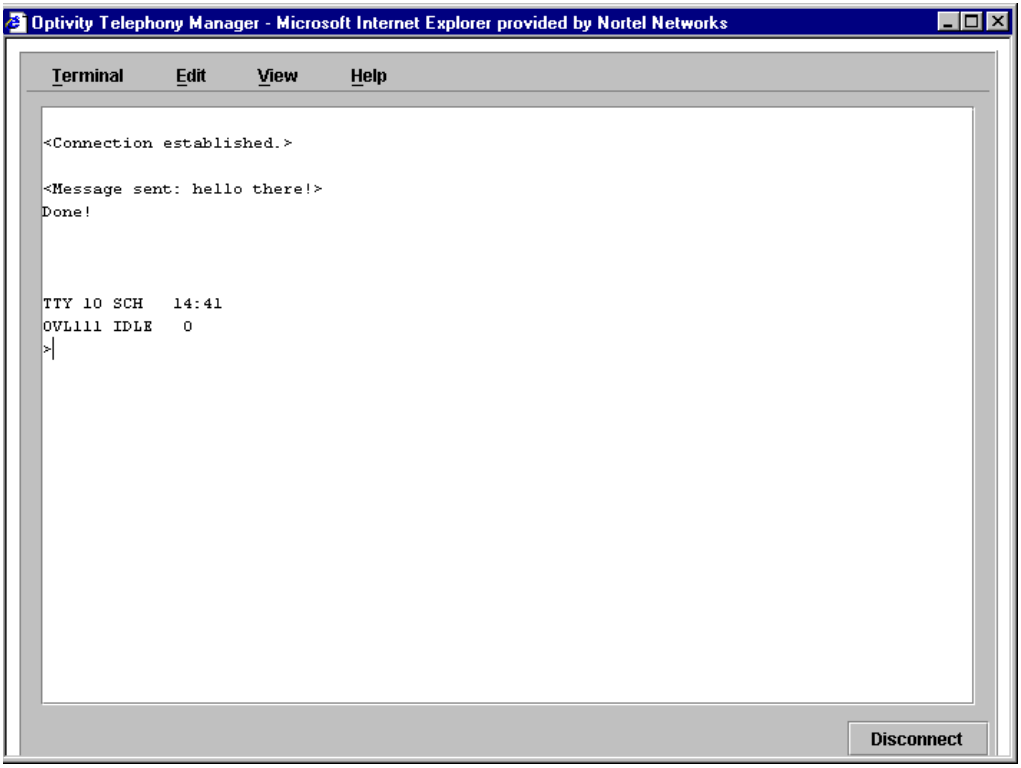
IMPORTANT!

Only the first client that connects to a port can send character input to the host.

The Web Virtual System Terminal displays most messages in a window. However, some messages that do not require immediate attention appear between the < > characters in the terminal screen (Figure 346). These messages are not sent to the host device or logged on the server. The messages can be:

- Status of this client (connected, disconnected, read-only connection, and so on)
- Status of other client (monitoring this port, disconnected)
- Broadcast message (received from another client, sent to another client)

Figure 346
Terminal Client showing messages



OTM Web Virtual System Terminal menus

The OTM Web Virtual System Terminal window has the following menu items:

Terminal menu

- Connect - Connect to a virtual port. This item appears when the client is not connected to a port.

  For a non-administrator user, if a port is already in use by someone else, then the connection is not allowed.
  If you have administrator privilege, you may connect to a port already in use by someone else. However, you may only monitor the session, and cannot send text to the host.

- Disconnect - Disconnect from a virtual port. This item appears when the client is connected to a port.
- Disconnect Others - Disconnect all other clients from a virtual port. This item appears only for a user with administrator privilege.

  If you select Terminal > Disconnect Others, then all other clients to the virtual port are disconnected, and you are then allowed to send text to the host.

- Send Message - Display a Send Message dialog box (Figure 347). This allows you to “broadcast” a message to all other users on the same virtual port.

Figure 347
Send Message dialog box

Edit Menu

- Copy - Copy the selected text to the clipboard.
- Select All - Select all text in the output window.

View Menu

- Look & Feel - Cascading menu determines the look of and feel of the user interface. You can choose:
  Java
  Windows
  Motif
- Overlay Passthru - The applet provides a separate edit box to enter commands, which allows for backspace while working in the M1 overlay environment.

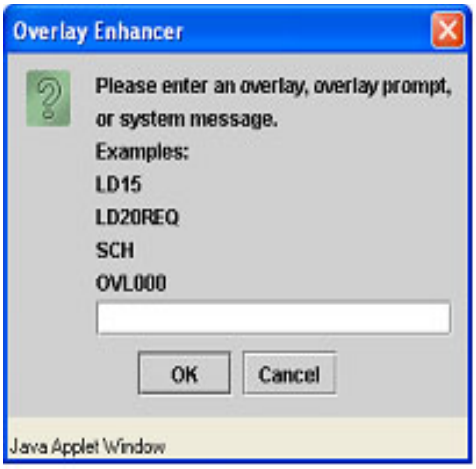
  If this menu item is selected, then the Help > Search M1 Help Files menu item becomes visible. If this menu item is cleared, then it behaves like a standard terminal window.

Help Menu

- Current Overlay - Display Help for the current overlay in a separate browser window. The OTM Web System Terminal monitors character I/O to keep track of the overlay information.
- Current Prompt - Display Help for the current overlay prompt in a separate browser window. The OTM Web System Terminal monitors character I/O to keep track of the overlay information.
- Last System Message - Display Help for the last system message in a separate browser window.
- Search M1 Help file - Display the Overlay Enhancer dialog box (Figure 348). This allows you to search for Help on an overlay, overlay prompt, or error message.
- About Terminal Client - Display release information for Web Terminal Client.

  Like the OTM System Terminal, the OTM Web Virtual System Terminal has context-sensitive Help. It monitors system input and output to determine the current overlay and prompt. You can also search for help for an overlay (LD22, for example), overlay prompt (LD22 REQ, for example), or M1 message (AMH0007, for example). You can either highlight text in the terminal screen and then select Help > Search, or select Help > Search, and then type in the string to search for.

Figure 348
I/O Navigator Overlay Enhancer dialog box



Web Maintenance Pages

To access Web Maintenance, the administrator must set up Login and Password for the selected system in windows see “Login process” in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

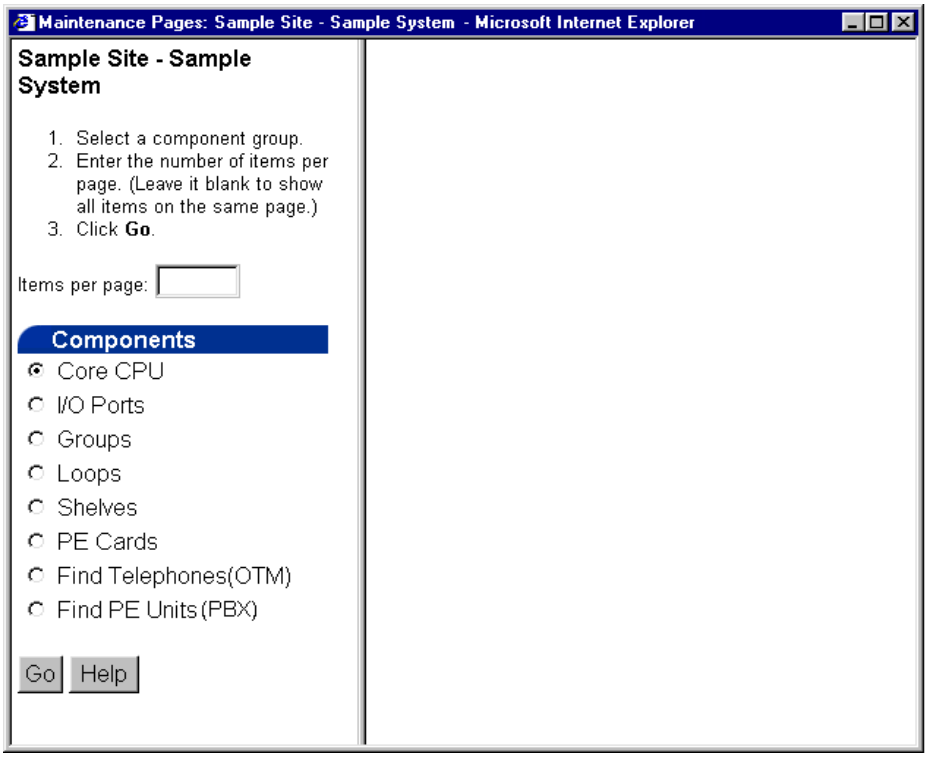
IMPORTANT!

To use Web Maintenance pages, the Login and Password to the system must be set up in the Administrator’s User group.

You can use Web Maintenance to perform maintenance operations on system hardware.

To launch Web Maintenance, click **Web Maint.** pages link under the target system on the System Navigator page. Figure 349 shows the browser page that opens when you launch Web Maintenance pages.

Figure 349
Maintenance Pages



Core CPU page

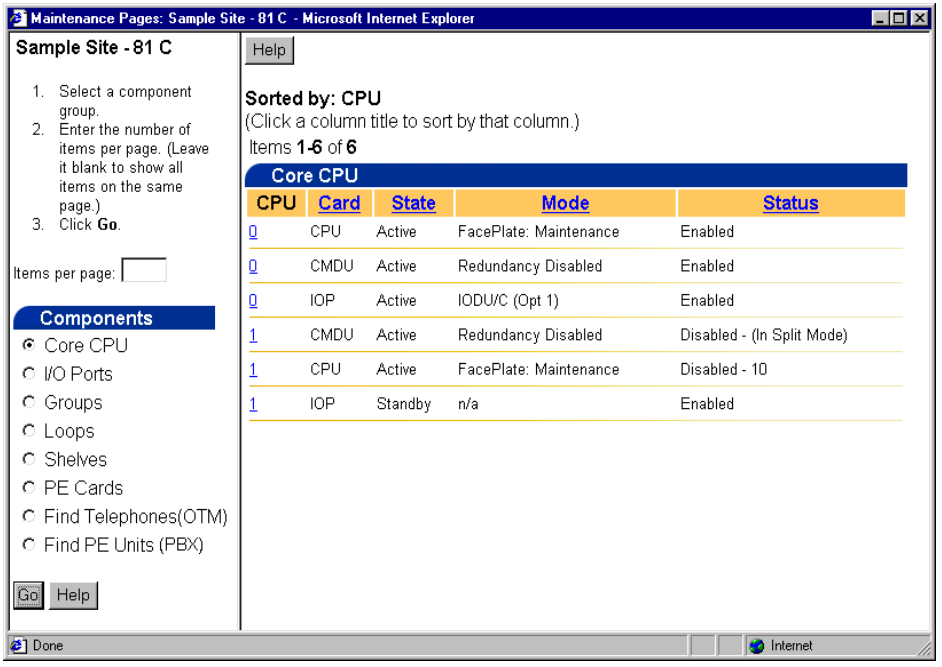
Procedure 147
Opening the Core CPU page

1 Click the Core CPU radio button.

2 Click **Go.**

The Core CPU page opens (Figure 350).

Figure 350
Core CPU summary page


Maintenance Pages: Sample Site - 81 C - Microsoft Internet Explorer
Sample Site - 81 C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Help
Sorted by: CPU
(Click a column title to sort by that column.)
Items 1-6 of 6
Core CPU
CPU Card State Mode Status
0 CPU Active FacePlate: Maintenance Enabled
0 CMDU Active Redundancy Disabled Enabled
0 IOP Active IODU/C (Opt 1) Enabled
1 CMDU Active Redundancy Disabled Disabled - (In Split Mode)
1 CPU Active FacePlate: Maintenance Disabled - 10
1 IOP Standby n/a Enabled
Done
Internet

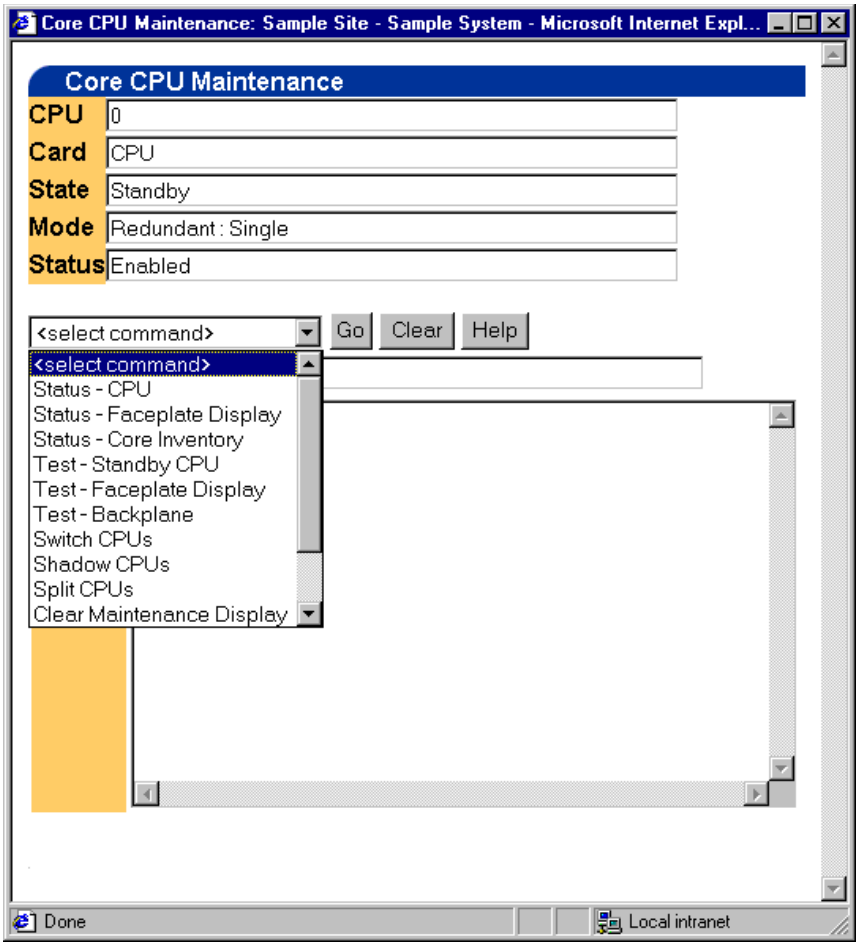
End of Procedure

Procedure 148
Performing maintenance operations on a CPU

1 Click the CPU number link that corresponds to the CPU on which you want to perform maintenance operations.

The Core CPU Maintenance Page for the selected CPU opens (Figure 351).

Figure 351
Core CPU Maintenance page

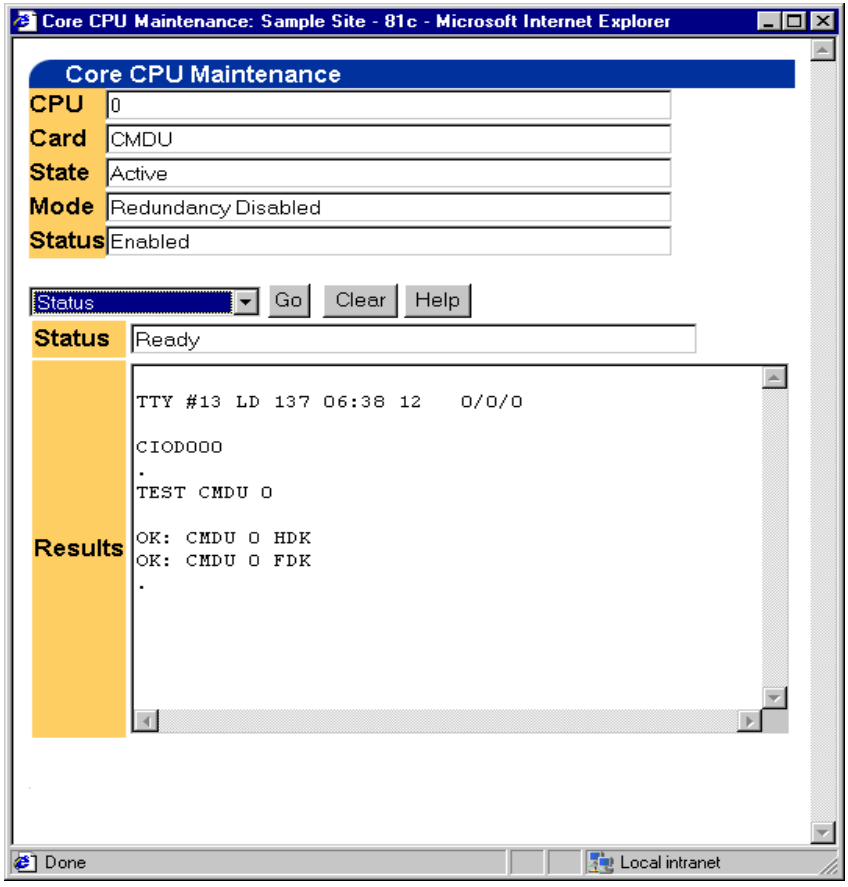


2 Select a command from the drop-down list.

3 Click **Go**.

The results appear in the Results frame (Figure 352).

Figure 352
Core CPU Maintenance command results

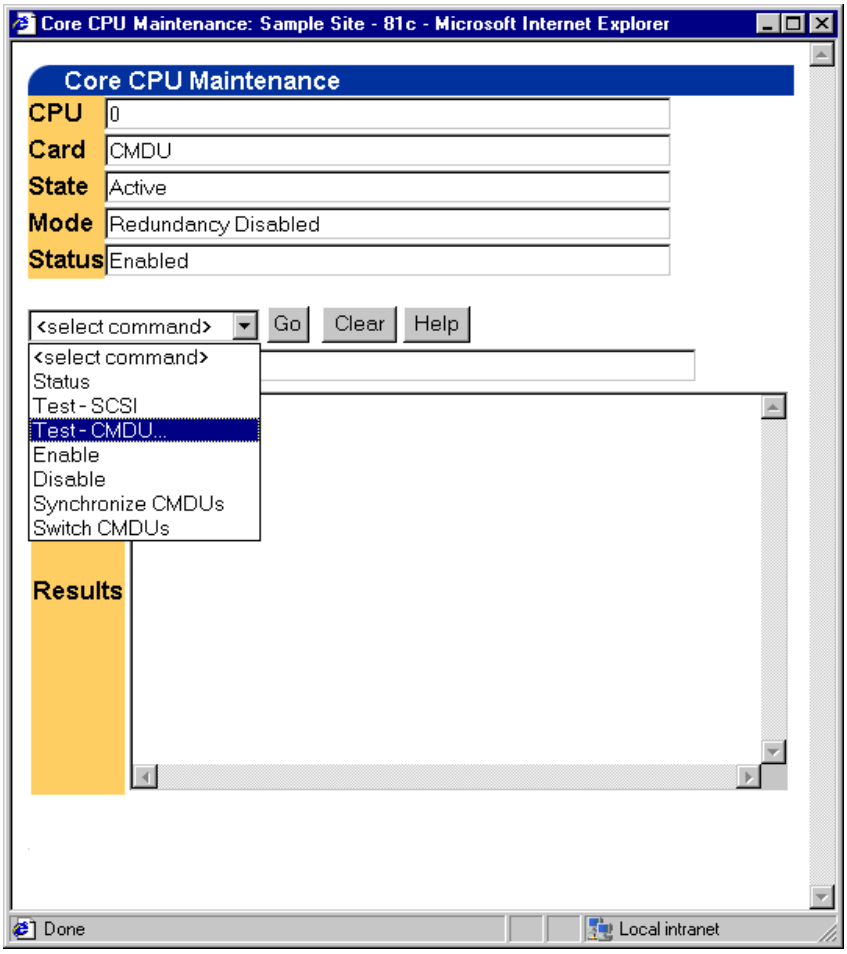


End of Procedure

Some of the Core CPU cards require that you input additional information prior to the execution of the Go command. The following example outlines the procedure for sending maintenance commands to a CMDU.

To perform maintenance commands on a CMDU, first select a CMDU, click the CPU number link that corresponds to the CMDU on which you want to perform maintenance commands. The Core CPU Maintenance Page for the selected CMDU opens (Figure 353).

Figure 353
Core CPU Maintenance page for a CMDU



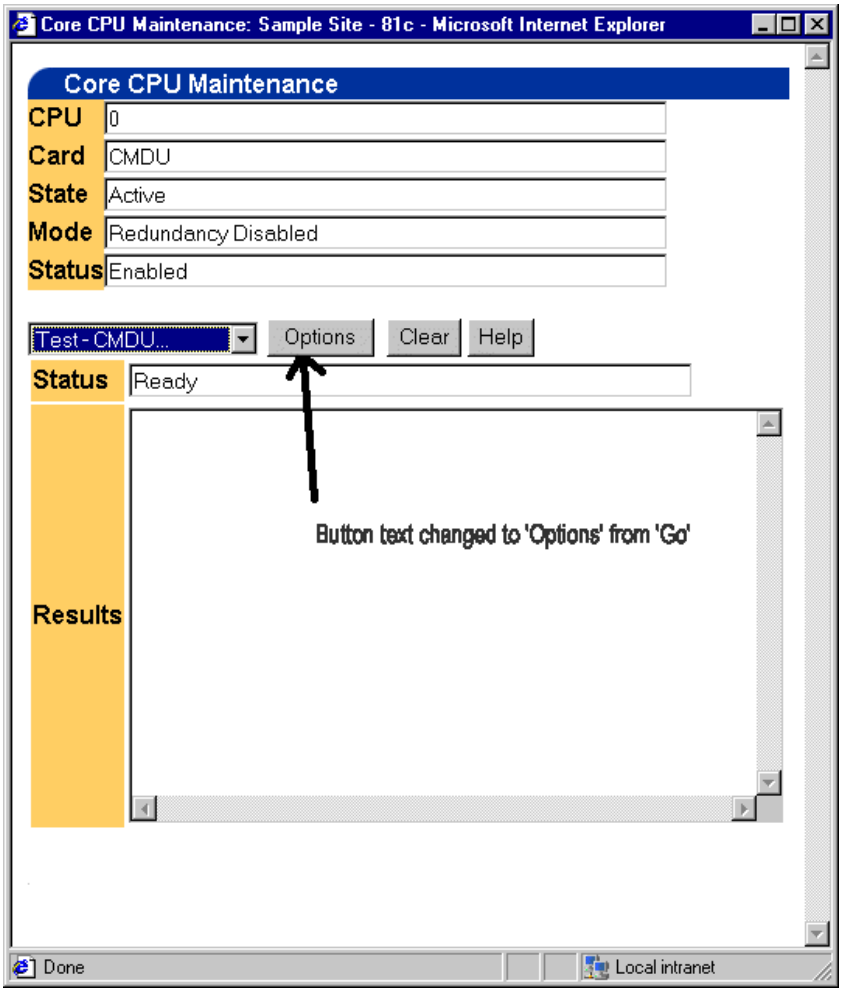
Procedure 149
Testing the selected CMDU

1 Select **Test-CMDU** from the drop-down list.

2 Click **Go**.

The Go button is replaced by an Options button (Figure 354).

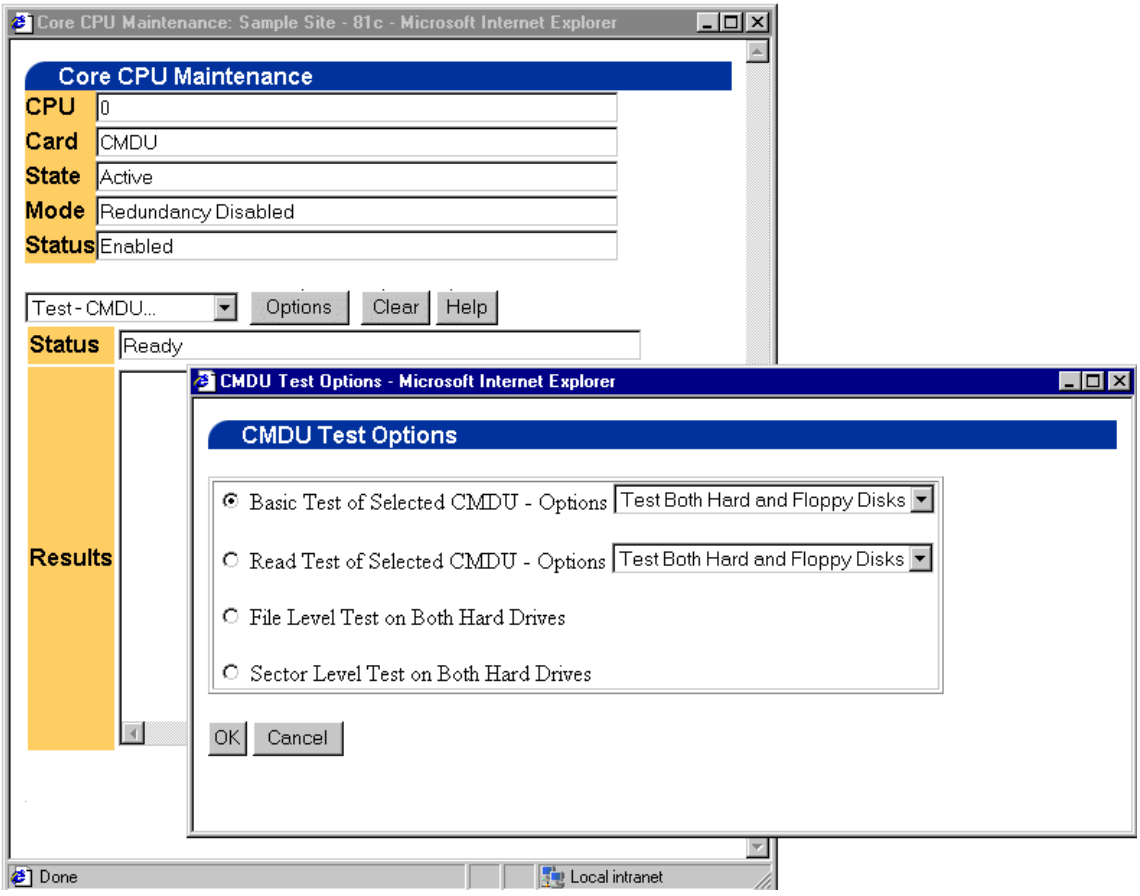
Figure 354
Core CPU Maintenance page with Test-CMDU command selected



3 Click **Options**.

The CMDU Test Options page appears (Figure 355).

Figure 355
CMDU Test Options



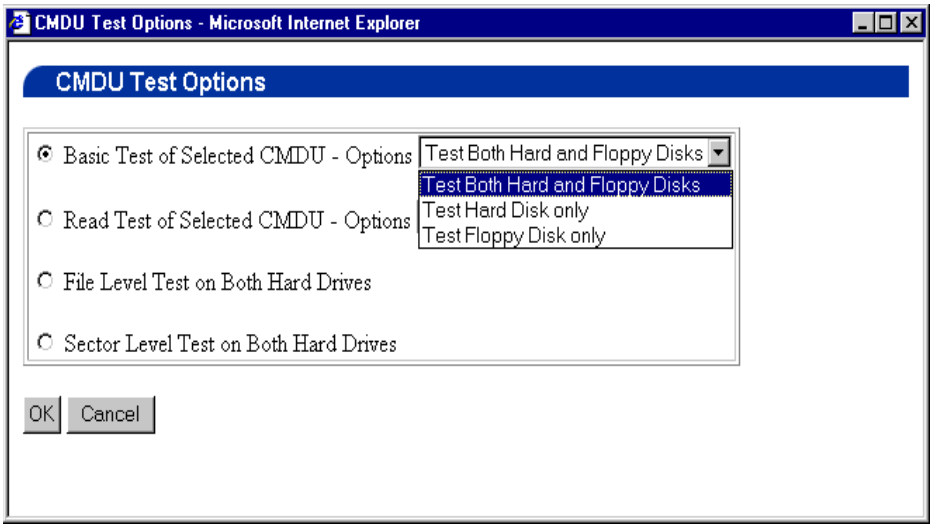
4 Click the radio button corresponding to the type of CMDU test that you want to perform.

To perform a basic test of the selected CMDU:

a. Click the radio button corresponding to Basic Test of Selected CMDU.

b. Select an option from the drop-down list (Figure 356).

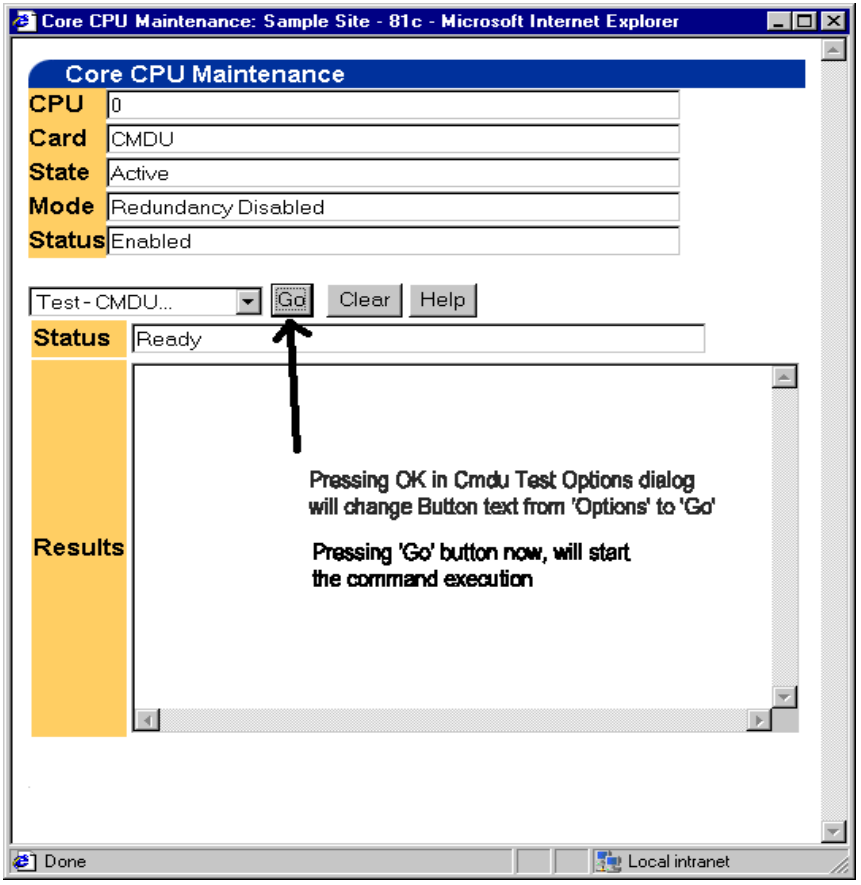
Figure 356
Basic Test of Selected CMDU - Options


CMDU Test Options - Microsoft Internet Explorer
CMDU Test Options
Basic Test of Selected CMDU - Options
Test Both Hard and Floppy Disks
Test Both Hard and Floppy Disks
Test Hard Disk only
Test Floppy Disk only
Read Test of Selected CMDU - Options
File Level Test on Both Hard Drives
Sector Level Test on Both Hard Drives
OK
Cancel

c. Click **OK**.

The Options button is replaced with a Go button (Figure 357).

Figure 357
Core CPU Maintenance page after options have been selected



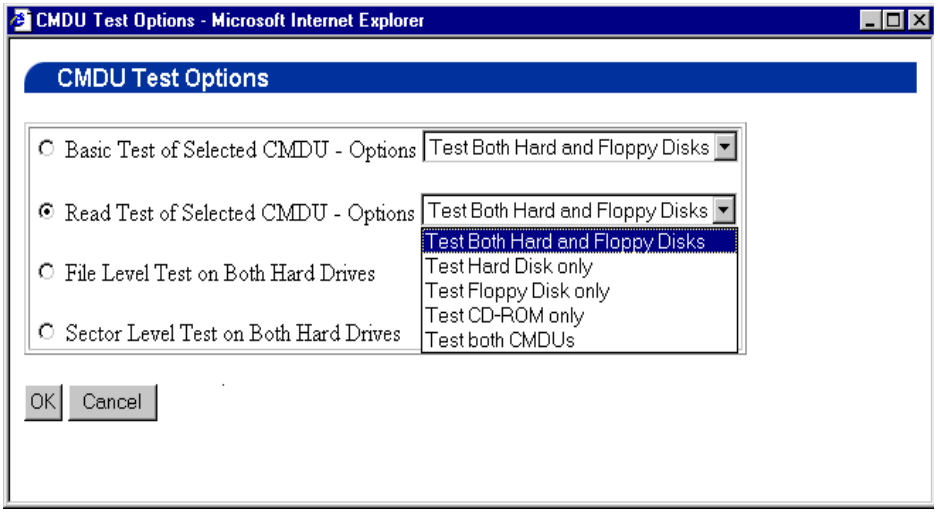
5 To perform a read test of the selected CMDU:

a. Click the radio button corresponding to Read Test of Selected CMDU.

b. Select an option from the drop-down list (Figure 358).

The Test CD-ROM Only option only appears when you are connected to a Meridian 1 system running X11 Release 23 or later.

Figure 358
Read Test of Selected CMDU - Options


CMDU Test Options - Microsoft Internet Explorer
CMDU Test Options
Basic Test of Selected CMDU - Options
Test Both Hard and Floppy Disks
Read Test of Selected CMDU - Options
Test Both Hard and Floppy Disks
File Level Test on Both Hard Drives
Sector Level Test on Both Hard Drives
Test Both Hard and Floppy Disks
Test Hard Disk only
Test Floppy Disk only
Test CD-ROM only
Test both CMDUs
OK
Cancel

c. Click **OK**.

The Options button is replaced with a Go button (Figure 357).

6 To perform a file level test on both hard drives:

a. Click the radio button corresponding to File Level Test on Both Hard Drives.

b. Click **OK**.

The Options button is replaced with a Go button (Figure 357).

7 To perform a sector level test on both hard drives:

a. Click the radio button corresponding to Sector Level Test on Both Hard Drives.

b. Click **OK**.

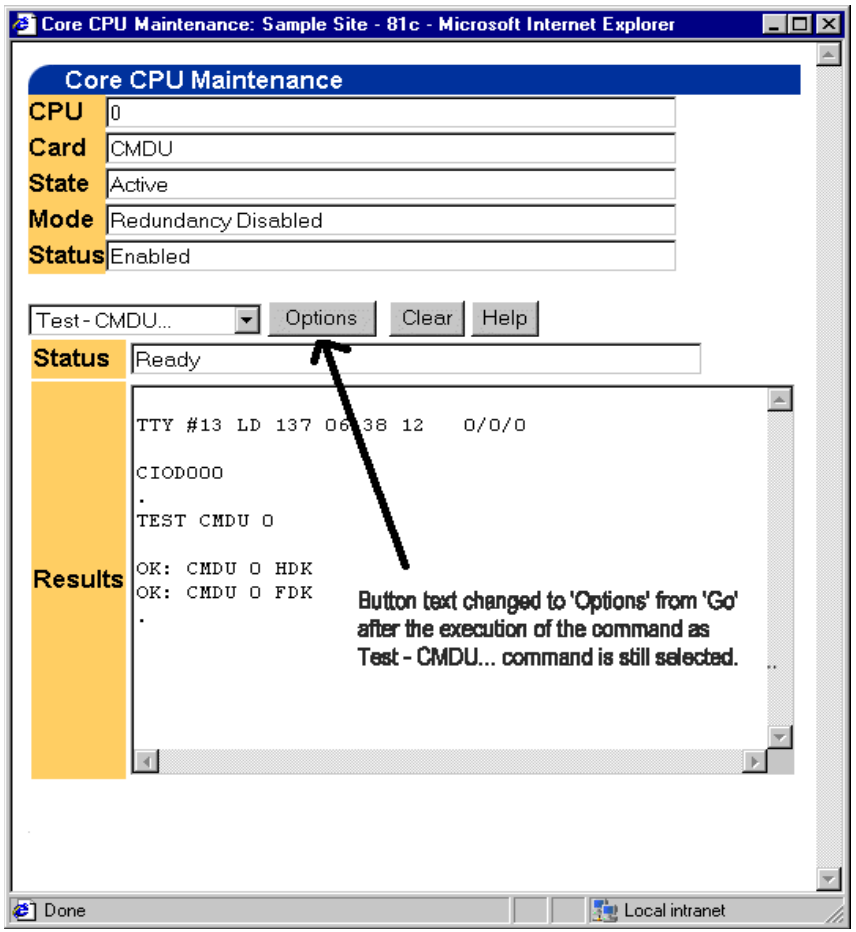
The Options button is replaced with a Go button (Figure 357).

8 Click **Go**.

The test results are presented in the Results frame (Figure 359).

The Go button is replaced with an Options button since Test-CMDU is still selected in the drop-down menu.

Figure 359
Core CPU Maintenance test results



End of Procedure

I/O Ports page

Procedure 150
Performing maintenance operations on an I/O Port

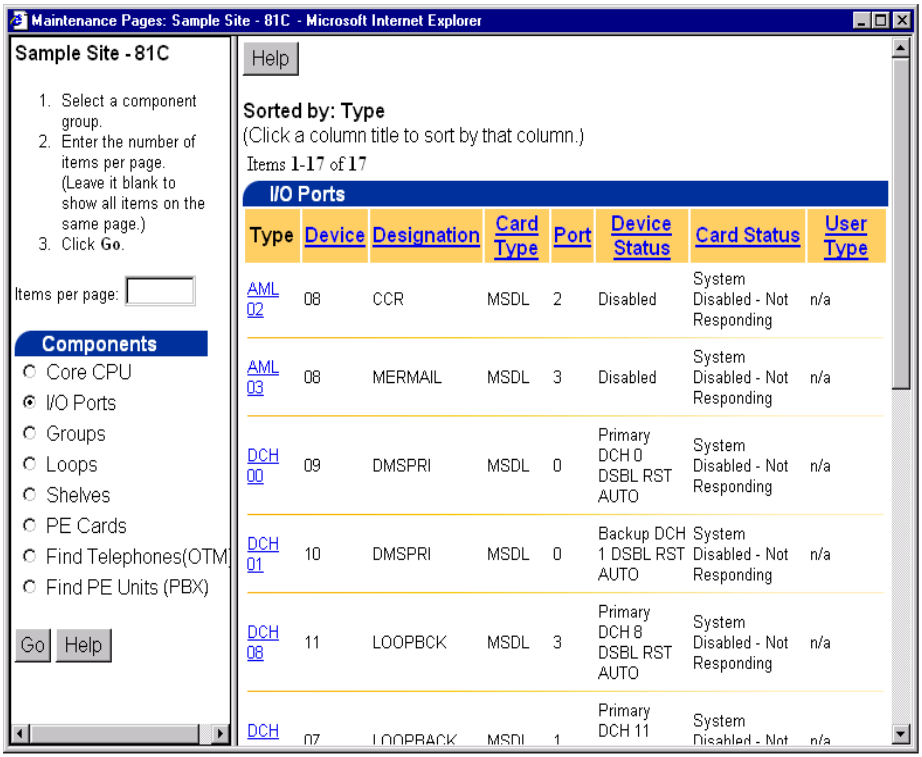
To open the I/O Ports page:

1 Click the **Core I/O Ports** radio button.

2 Click **Go**.

The I/O Ports summary page opens (Figure 360).

Figure 360
I/O Ports summary page

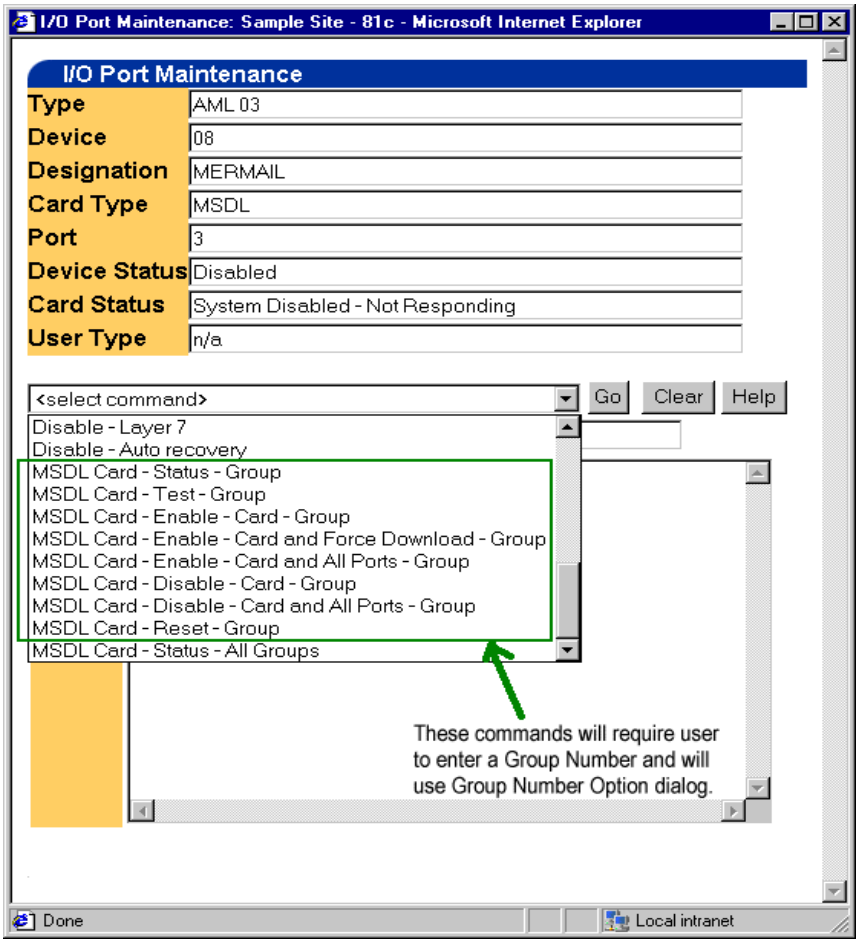

Maintenance Pages: Sample Site - 81C - Microsoft Internet Explorer
Sample Site - 81C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Help
Sorted by: Type
(Click a column title to sort by that column.)
Items 1-17 of 17
I/O Ports
Type
Device
Designation
Card Type
Port
Device Status
Card Status
User Type
AML 02 08 CCR MSDL 2 Disabled System Disabled - Not Responding n/a
AML 03 08 MERMAIL MSDL 3 Disabled System Disabled - Not Responding n/a
DCH 00 09 DMSPRI MSDL 0 Primary DCH 0 DSBL RST AUTO System Disabled - Not Responding n/a
DCH 01 10 DMSPRI MSDL 0 Backup DCH 1 DSBL RST AUTO System Disabled - Not Responding n/a
DCH 08 11 LOOPBCK MSDL 3 Primary DCH 8 DSBL RST AUTO System Disabled - Not Responding n/a
DCH 07 LOOPBACK MSDL 1 Primary DCH 11 System Disabled - Not n/a

To perform maintenance operations on an I/O Port:

3 Click the Type link that corresponds to the port on which you want to perform maintenance operations.

The I/O Port Maintenance page for the selected port opens (Figure 361).

Figure 361
I/O Port Maintenance page

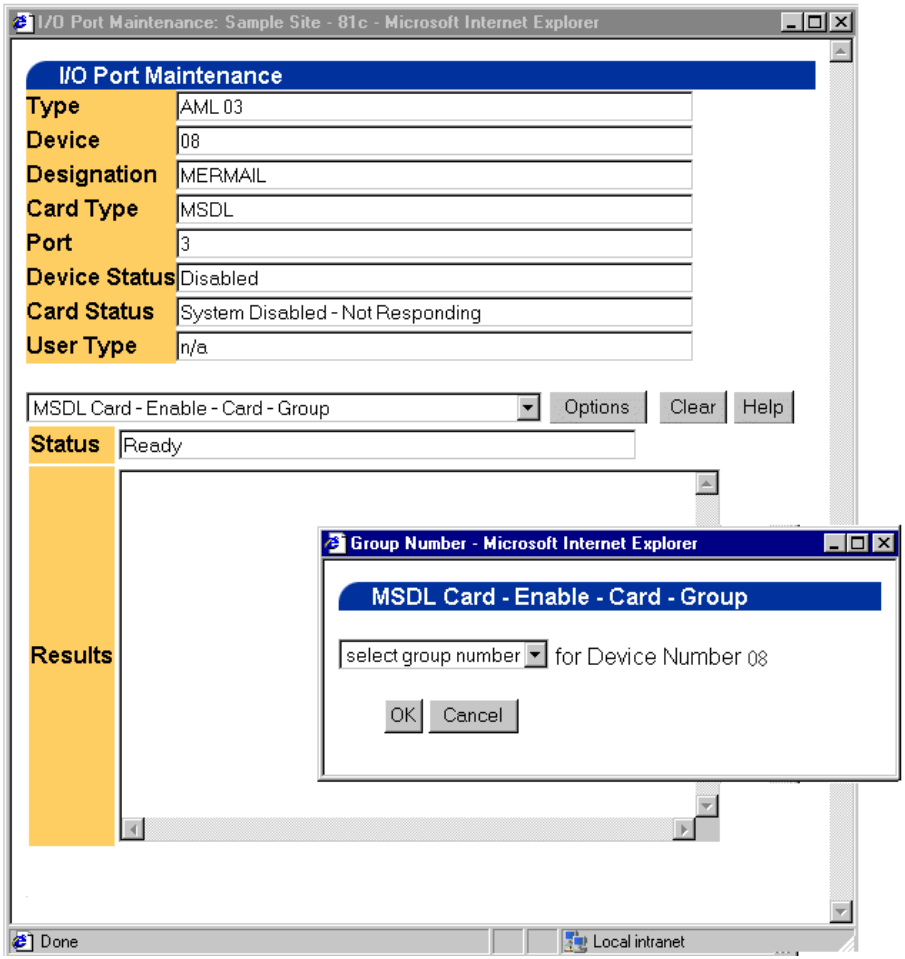

I/O Port Maintenance: Sample Site - 81c - Microsoft Internet Explorer
I/O Port Maintenance
Type
AML 03
Device
08
Designation
MERMAIL
Card Type
MSDL
Port
3
Device Status
Disabled
Card Status
System Disabled - Not Responding
User Type
n/a
<select command>
Go
Clear
Help
Disable - Layer 7
Disable - Auto recovery
MSDL Card - Status - Group
MSDL Card - Test - Group
MSDL Card - Enable - Card - Group
MSDL Card - Enable - Card and Force Download - Group
MSDL Card - Enable - Card and All Ports - Group
MSDL Card - Disable - Card - Group
MSDL Card - Disable - Card and All Ports - Group
MSDL Card - Reset - Group
MSDL Card - Status - All Groups
These commands will require user to enter a Group Number and will use Group Number Option dialog.
Done
Local intranet

Some I/O Port Maintenance operations require that you select a group number prior to execution of the command. To select a group number:

4 Click **Options**.

5 Select the group number from the drop-down list (Figure 362).

Figure 362
Group number option dialog box



The command that you selected from the select command drop-down list appears as the title in the select group number dialog box.

6 Click **OK**.

7 Click **Go**.

The Device Status field is updated to indicate that the card is enabled.

End of Procedure

UIPE D-Channel Monitoring tool enhancement

Procedure 151
Enable or disable a message, or enhance monitoring, complete the following:

1. Select **I/O Ports** radio button in “Components” pane and click on Go button.
2. Click on the **DCH02** option of I/O Ports pane.
3. Click on **Channels…** option
4. Configure the information.

The commands for UIPE proprietary messages and Q.931 messages can be executed from Loops option of Components pane by selecting the “Loops” radio button in Components pane.

End of Procedure

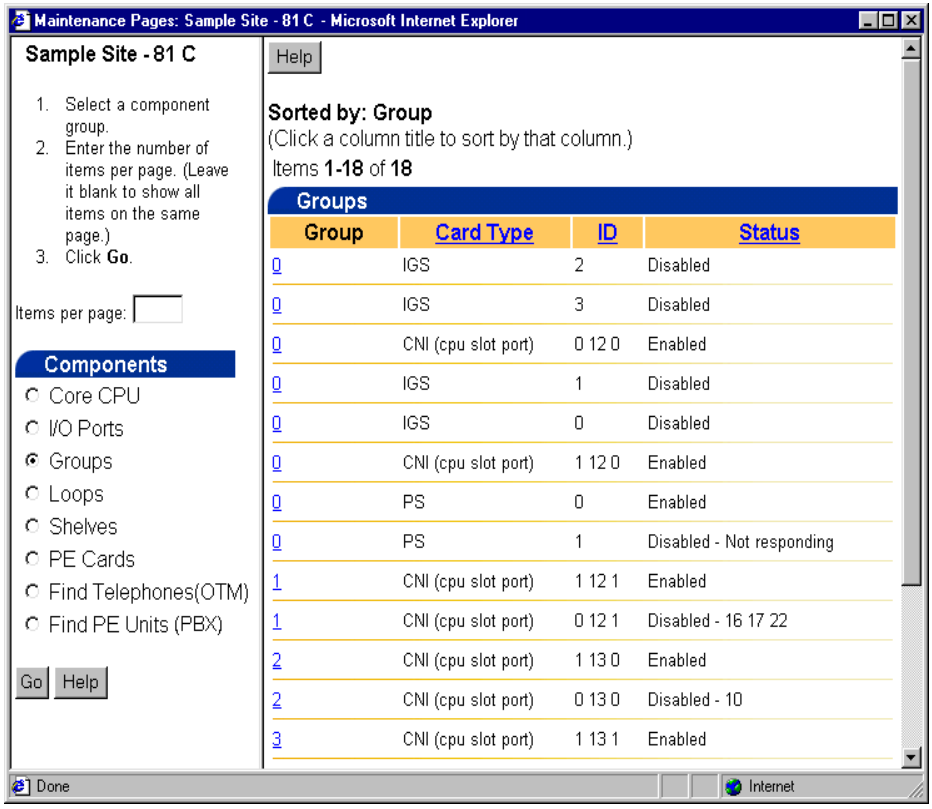
Groups page

Procedure 152
Opening the Groups page

1. Click **Groups** radio button.
2. Click **Go**.

   The Groups summary page opens (Figure 363).

Figure 363
Groups summary page


Maintenance Pages: Sample Site - 81 C - Microsoft Internet Explorer
Sample Site - 81 C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Help
Sorted by: Group
(Click a column title to sort by that column.)
Items 1-18 of 18
Groups
Group | Card Type | ID | Status
0 | IGS | 2 | Disabled
0 | IGS | 3 | Disabled
0 | CNI (cpu slot port) | 0 12 0 | Enabled
0 | IGS | 1 | Disabled
0 | IGS | 0 | Disabled
0 | CNI (cpu slot port) | 1 12 0 | Enabled
0 | PS | 0 | Enabled
0 | PS | 1 | Disabled - Not responding
1 | CNI (cpu slot port) | 1 12 1 | Enabled
1 | CNI (cpu slot port) | 0 12 1 | Disabled - 16 17 22
2 | CNI (cpu slot port) | 1 13 0 | Enabled
2 | CNI (cpu slot port) | 0 13 0 | Disabled - 10
3 | CNI (cpu slot port) | 1 13 1 | Enabled
Done
Internet

End of Procedure

Loops page

Procedure 153
Performing maintenance operations on a Loop

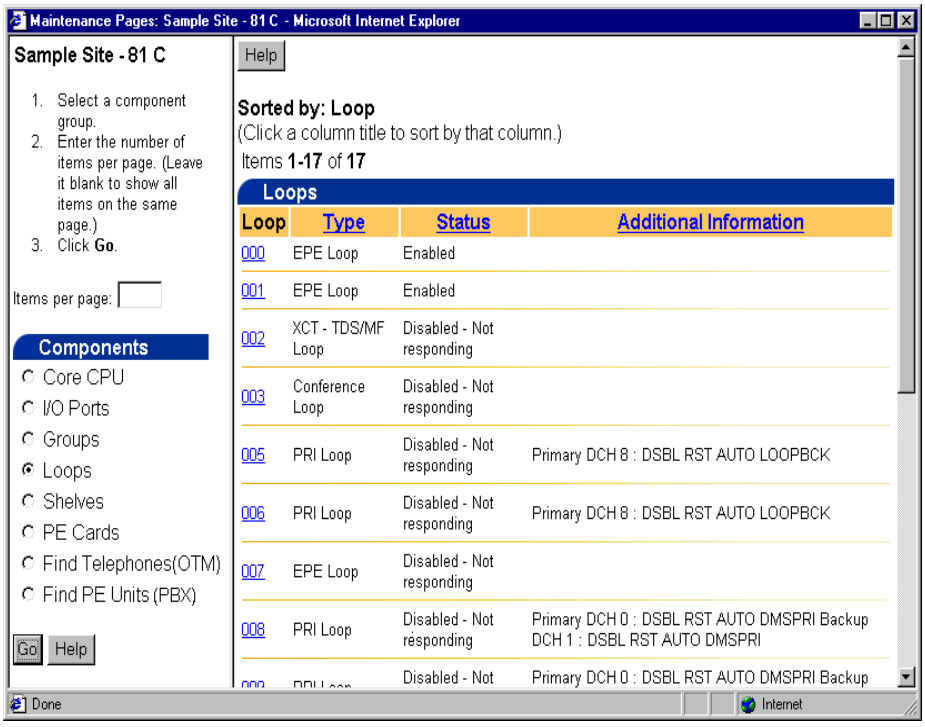
To open the Loops page:

1 Click **Loops** radio button.

2 Click **Go**.

The Loops summary page opens (Figure 364).

Figure 364
Loops summary page

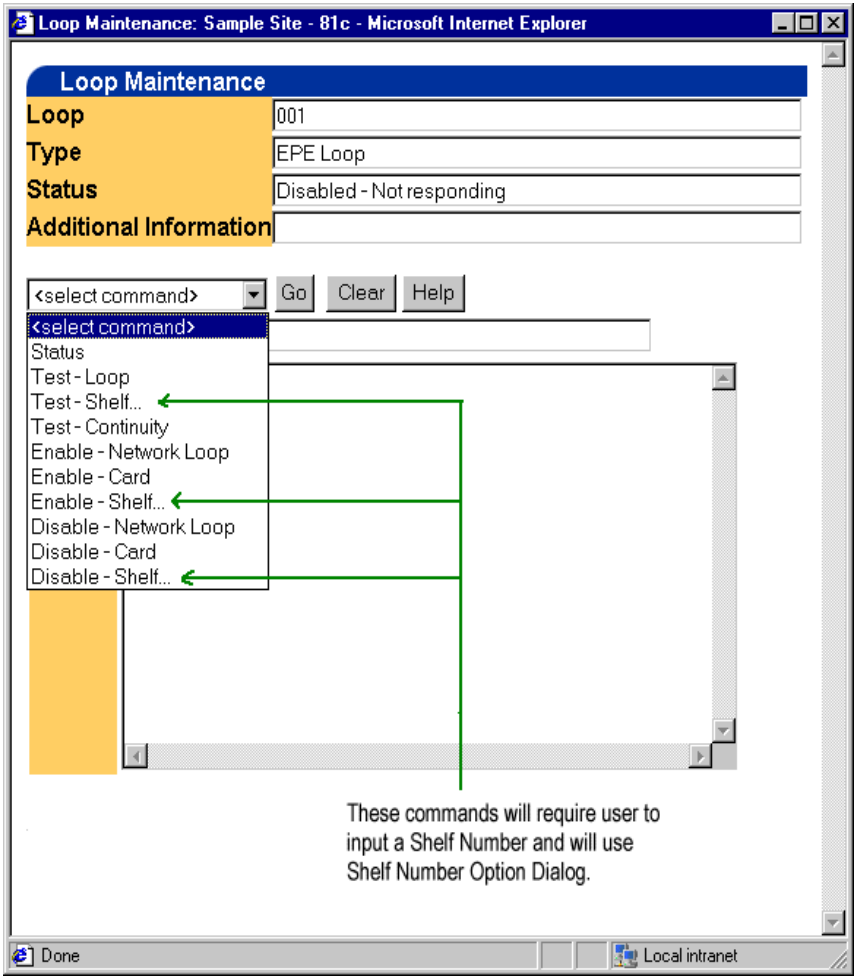

Maintenance Pages: Sample Site - 81 C - Microsoft Internet Explorer
Sample Site - 81 C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Help
Sorted by: Loop
(Click a column title to sort by that column.)
Items 1-17 of 17
Loops
Loop
Type
Status
Additional Information
000 EPE Loop Enabled
001 EPE Loop Enabled
002 XCT - TDS/MF Loop Disabled - Not responding
003 Conference Loop Disabled - Not responding
005 PRI Loop Disabled - Not responding Primary DCH 8 : DSBL RST AUTO LOOPBCK
006 PRI Loop Disabled - Not responding Primary DCH 8 : DSBL RST AUTO LOOPBCK
007 EPE Loop Disabled - Not responding
008 PRI Loop Disabled - Not responding Primary DCH 0 : DSBL RST AUTO DMSPRI Backup DCH 1 : DSBL RST AUTO DMSPRI
Disabled - Not Primary DCH 0 : DSBL RST AUTO DMSPRI Backup
Done
Internet

To perform maintenance operations on a Loop:

3 Click the Loop link that corresponds to the loop on which you want to perform maintenance operations.

The Loop Maintenance page for the selected loop appears (Figure 365).

Figure 365
Loop Maintenance page

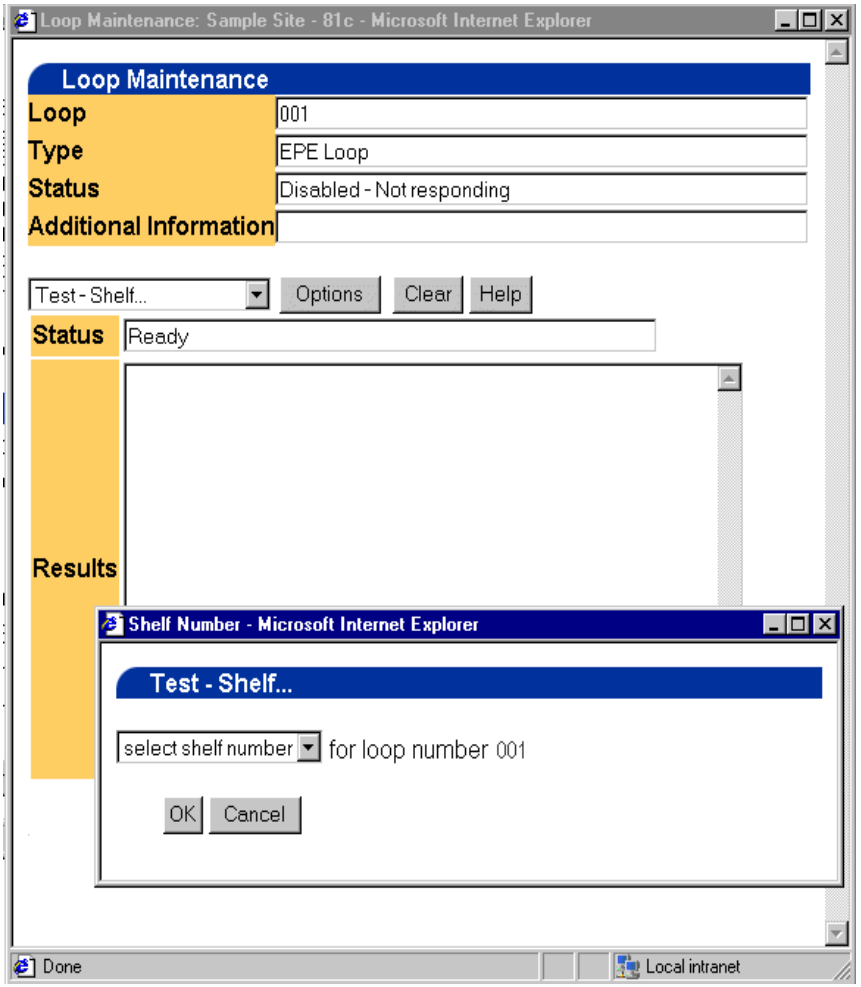


Some Loop Maintenance operations require that you select a shelf number prior to execution of the command. For these operations, the Go button becomes an Options button (Figure 366). To select a shelf number:

4 Click **Options**.

5 Select the shelf number from the drop-down list (Figure 366).

Figure 366
Loop Maintenance page with shelf number option dialog box



The command that you selected from the select command drop-down list appears as the title in the select shelf number dialog box.

6 Click **OK**.

7 Click **Go.**

The test results are returned in the Results frame.

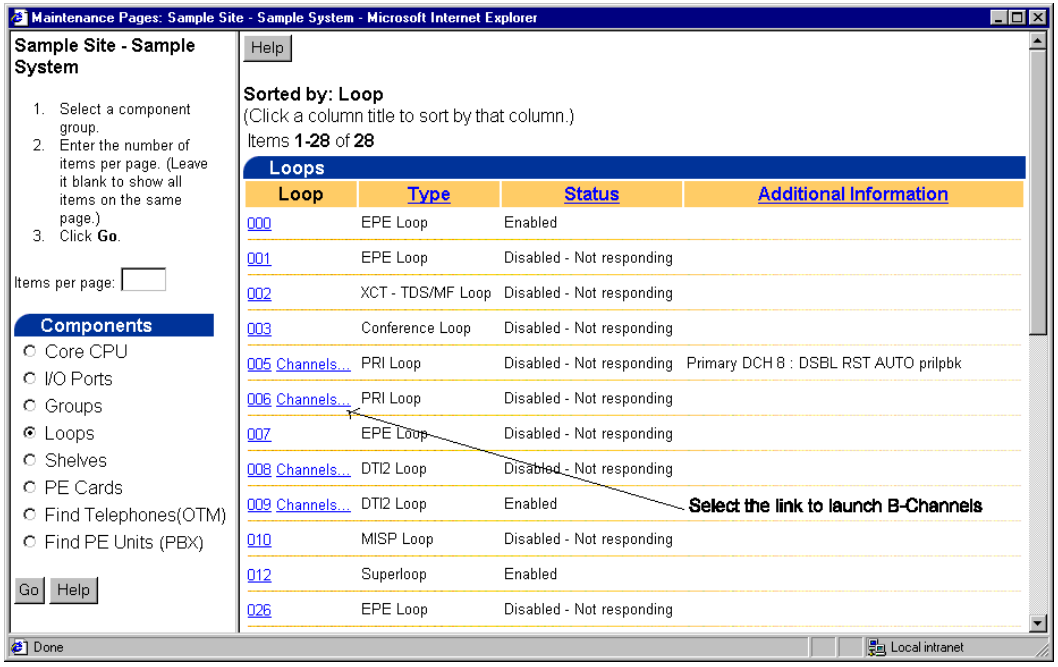
End of Procedure

B-channels maintenance page

Procedure 154
Performing maintenance operations on B-channels

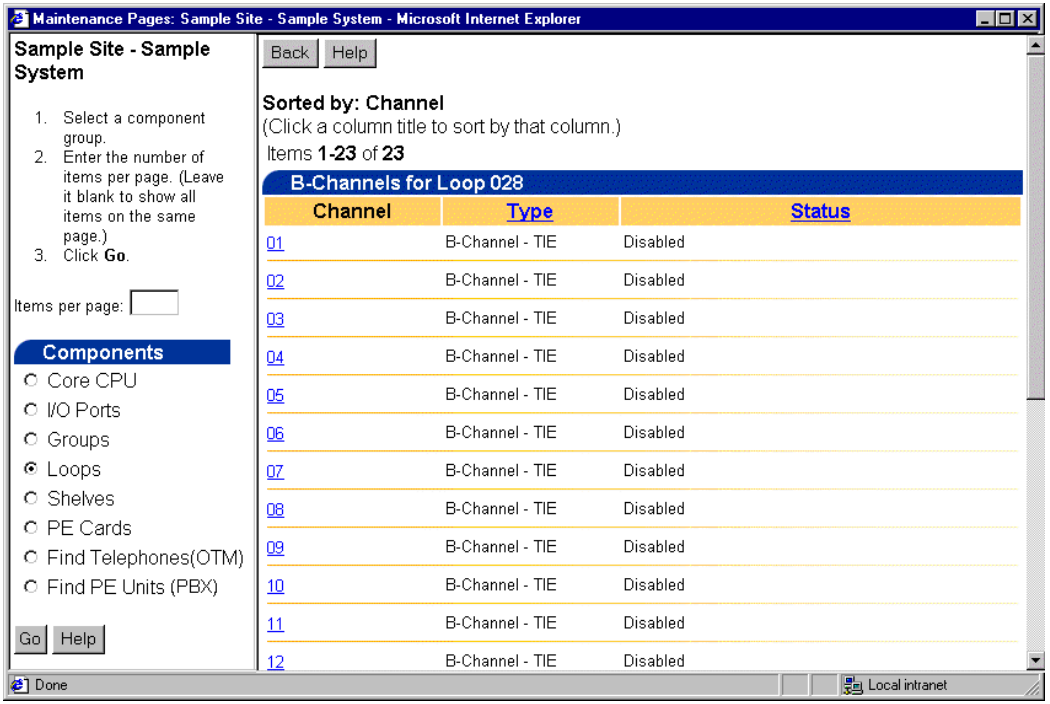
1 From the Loops summary page (Figure 367), select the Loop link for the Superloop on which you want to perform maintenance.

Figure 367
Loops summary page with PRI and DTI2 loops


Maintenance Pages: Sample Site - Sample System - Microsoft Internet Explorer
Sample Site - Sample System
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Help
Sorted by: Loop
(Click a column title to sort by that column.)
Items 1-28 of 28
Loops
Loop
Type
Status
Additional Information
000 EPE Loop Enabled
001 EPE Loop Disabled - Not responding
002 XCT - TDS/MF Loop Disabled - Not responding
003 Conference Loop Disabled - Not responding
005 Channels... PRI Loop Disabled - Not responding Primary DCH 8 : DSBL RST AUTO prilpbk
006 Channels... PRI Loop Disabled - Not responding
007 EPE Loop Disabled - Not responding
008 Channels... DTI2 Loop Disabled - Not responding
009 Channels... DTI2 Loop Enabled
010 MISP Loop Disabled - Not responding
012 Superloop Enabled
026 EPE Loop Disabled - Not responding
Select the link to launch B-Channels
Done
Local intranet

The B-channels summary page for the selected loop opens (Figure 368).

Figure 368
B-Channels summary page

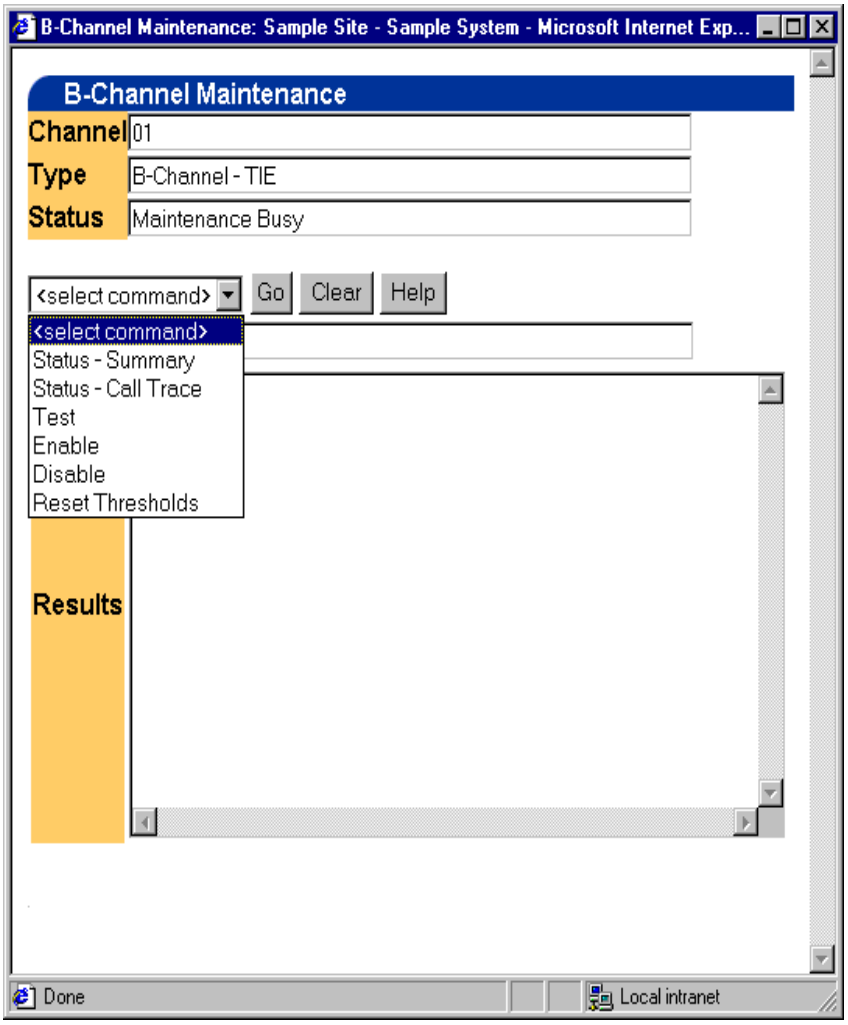


2 Click the Channel link that corresponds to the channel on which you want to perform maintenance operations.

The B-Channel Maintenance page for the selected channel opens (Figure 369).

The available maintenance commands are dependent on the type of B-Channel selected.

Figure 369
B-Channel Maintenance page

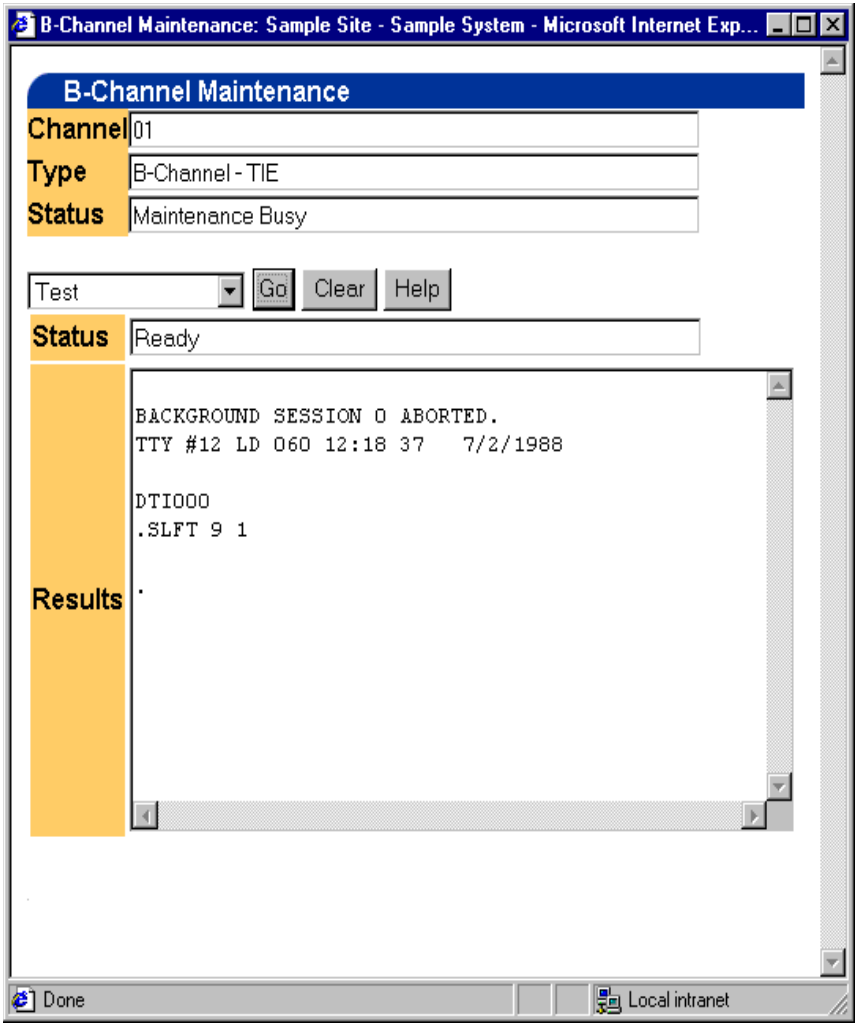


3 Select a command from the drop-down list.

4 Click **Go**.

The results of the command appear in the Results frame (Figure 370).

Figure 370
B-Channel Maintenance test results



End of Procedure

PE Shelves page

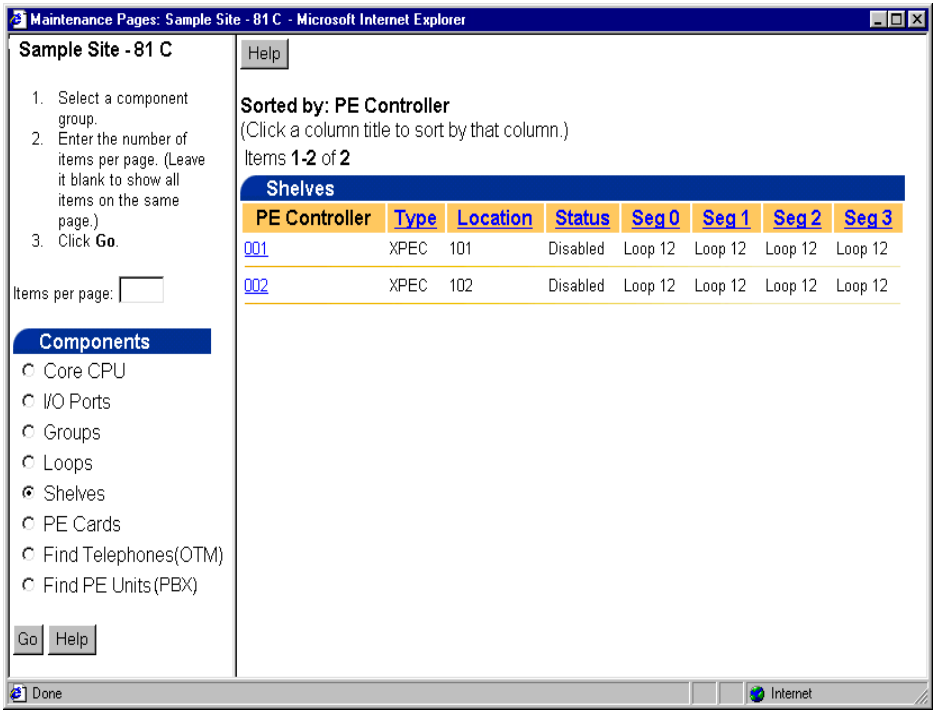
Procedure 155
Opening the PE Shelves page

1 Click **Shelves** radio button.

2 Click **Go**.

The PE Shelves summary page appears (Figure 371).

Figure 371
PE Shelves summary page



End of Procedure

PE Cards page

Procedure 156
Performing maintenance commands on a PE card

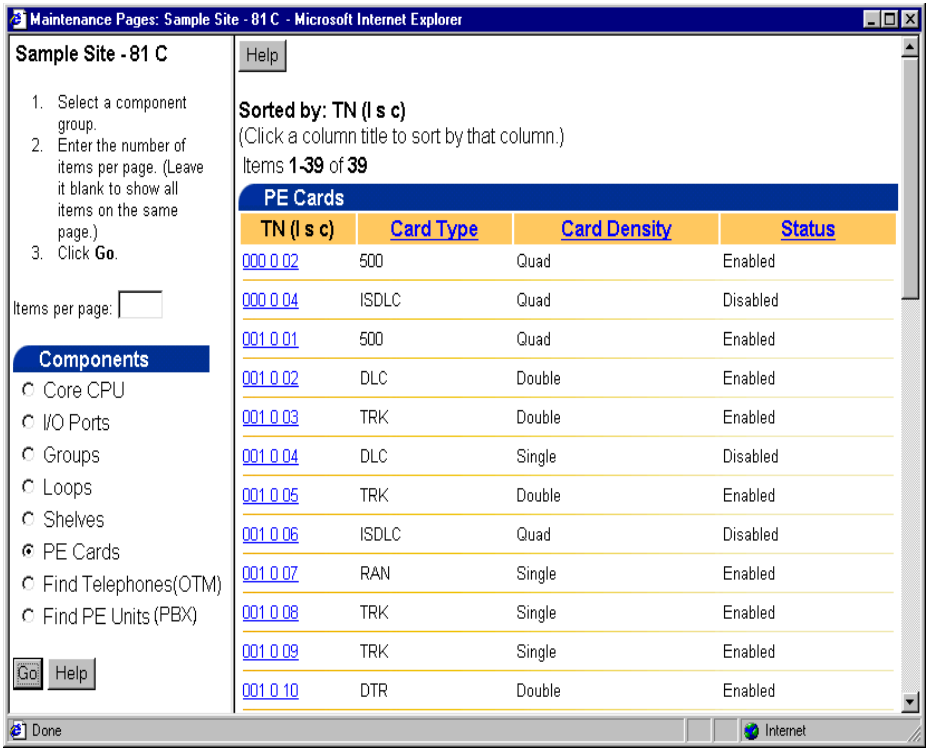
To open the PE Cards page:

1 Click **PE Cards** radio button.

2 Click **Go**.

The PE Cards summary page appears (Figure 372).

Figure 372
PE Cards summary page

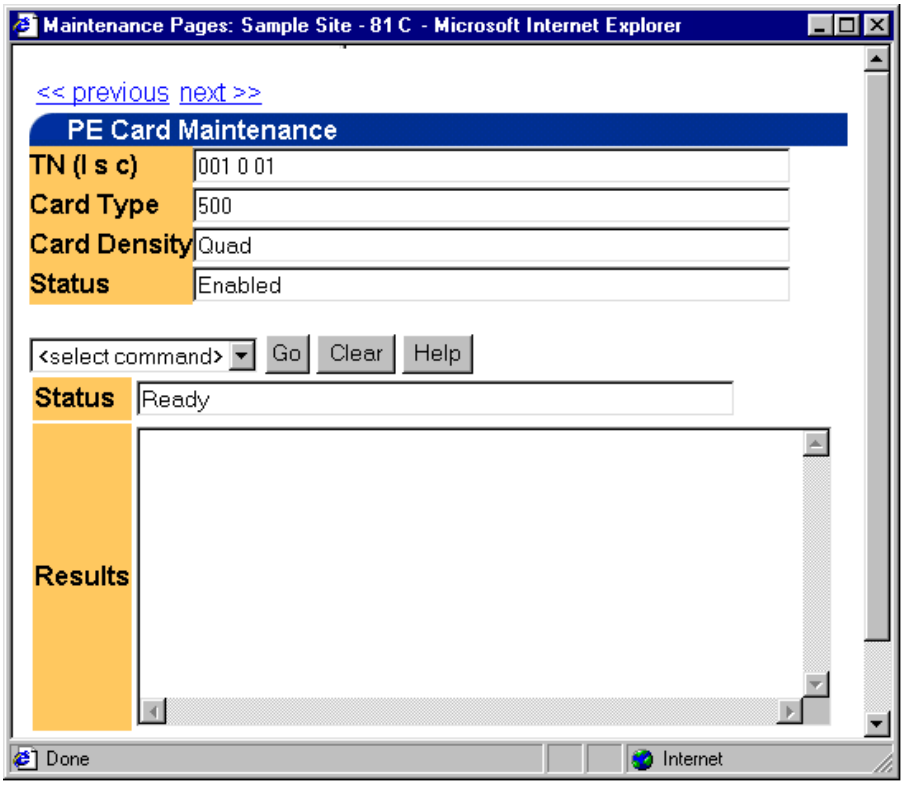

Maintenance Pages: Sample Site - 81 C - Microsoft Internet Explorer
Sample Site - 81 C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Help
Sorted by: TN (l s c)
(Click a column title to sort by that column.)
Items 1-39 of 39
PE Cards
TN (l s c) | Card Type | Card Density | Status
000 0 02 | 500 | Quad | Enabled
000 0 04 | ISDLC | Quad | Disabled
001 0 01 | 500 | Quad | Enabled
001 0 02 | DLC | Double | Enabled
001 0 03 | TRK | Double | Enabled
001 0 04 | DLC | Single | Disabled
001 0 05 | TRK | Double | Enabled
001 0 06 | ISDLC | Quad | Disabled
001 0 07 | RAN | Single | Enabled
001 0 08 | TRK | Single | Enabled
001 0 09 | TRK | Single | Enabled
001 0 10 | DTR | Double | Enabled
Done
Internet

To perform maintenance commands on a PE card:

3 Click the TN link that corresponds to the PE card on which you want to perform maintenance commands.

The maintenance page for the selected PE card appears (Figure 373). This example shows the maintenance page for TN 001 0 01.

Figure 373
PE Card Maintenance page



4 Select a command from the drop-down list.

5 Click **Go**.

The results of the command are placed in the Results box. Once the command has been executed, the component state is updated.

End of Procedure

Find Telephones and Find PE Units pages

Use the PE Units list to manage Directory Numbers (DNs), and Terminal Numbers (TNs). Before the list appears, a find option is provided since it is unlikely that you would want to view the entire list. The PE Units list can be retrieved from the Station database on the OTM Server, using Find Telephones (Figure 374). The PE Units list can also be retrieved directly from the system (Figure 375).

Find Telephones (OTM)

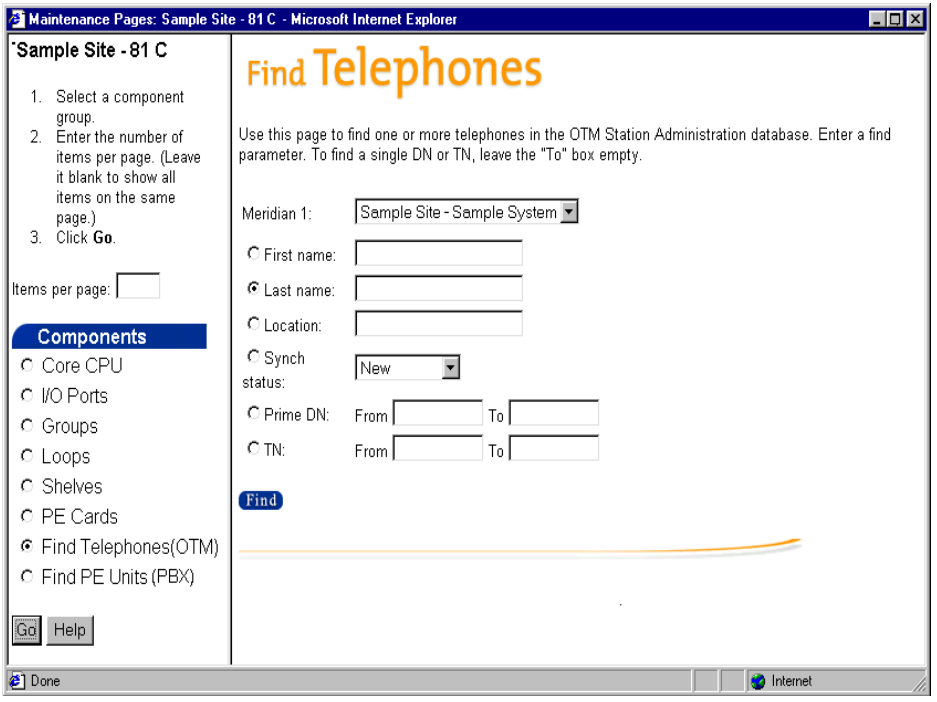
Procedure 157
Opening the Find Telephones (OTM) page

1 Click the Find Telephones (OTM) radio button.

2 Click **Go**.

The Find Telephones page appears (Figure 374).

Figure 374
Maintenance Pages Find Telephones (OTM) page



End of Procedure

Find PE Units (PBX)

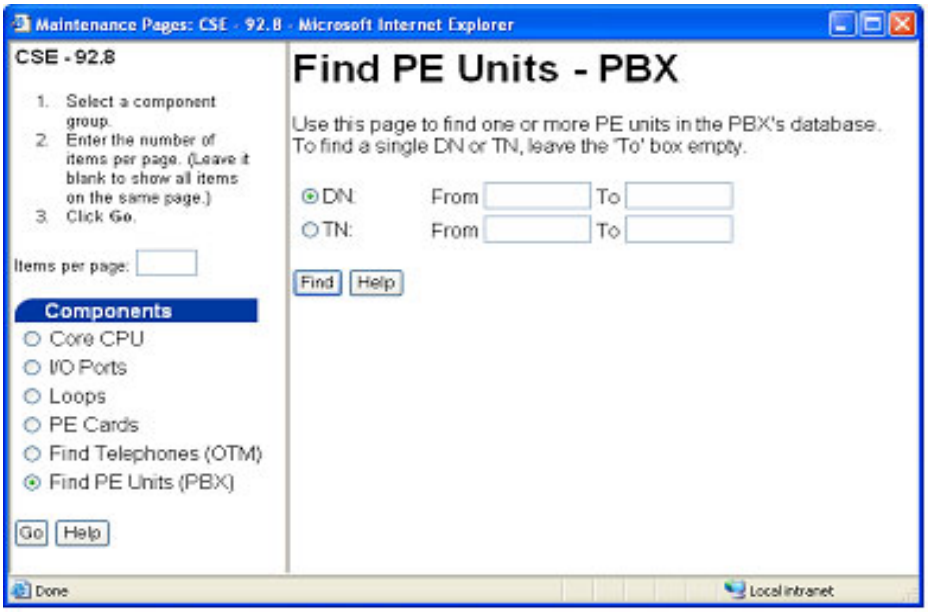
Procedure 158
Opening the Find PE Units (PBX) page

1 Select the Find PE Units (PBX) button (Figure 374).

2 Click **Go**.

The Find PE Units (PBX) page appears (Figure 375).

Figure 375
Maintenance Pages Find PE Units (M1) page


Maintenance Pages: CSE - 92.8 - Microsoft Internet Explorer
CSE - 92.8
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Loops
PE Cards
Find Telephones (OTM)
Find PE Units (PBX)
Go
Help
Find PE Units - PBX
Use this page to find one or more PE units in the PBX's database. To find a single DN or TN, leave the 'To' box empty.
DN: From To
TN: From To
Find
Help
Done
Local intranet

End of Procedure

PE Units maintenance

Procedure 159
Performing PE Units maintenance

In either the Find Telephones page or the Find PE Units (PBX) page:

1 Enter a single DN or TN, or enter a range of DNs or TNs.

2 Click **Find**.

After you click Find, the results appear as shown in Figure 376 if you entered DN(s), or as shown in Figure 377 if you entered TN(s).

Figure 376
PE Units Find Results (by DN)

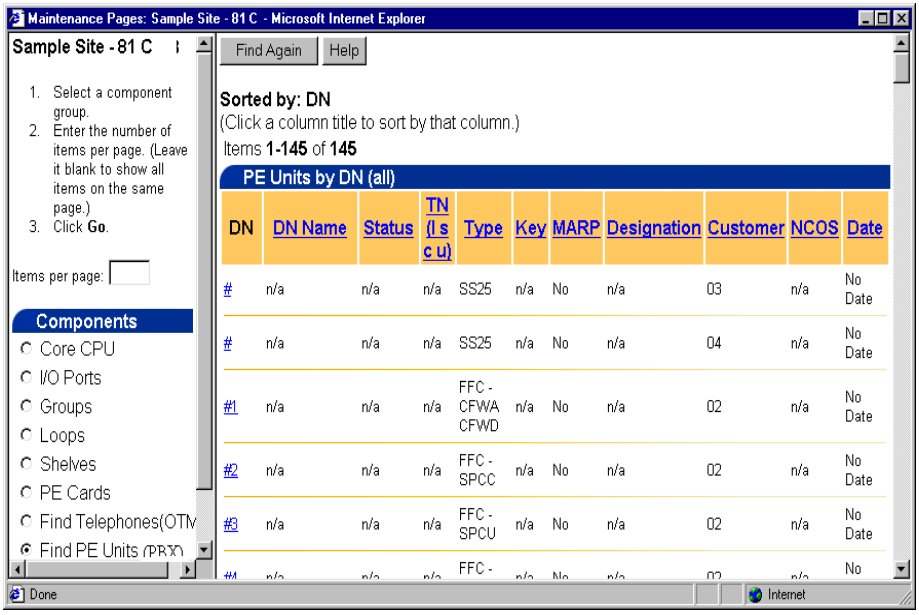
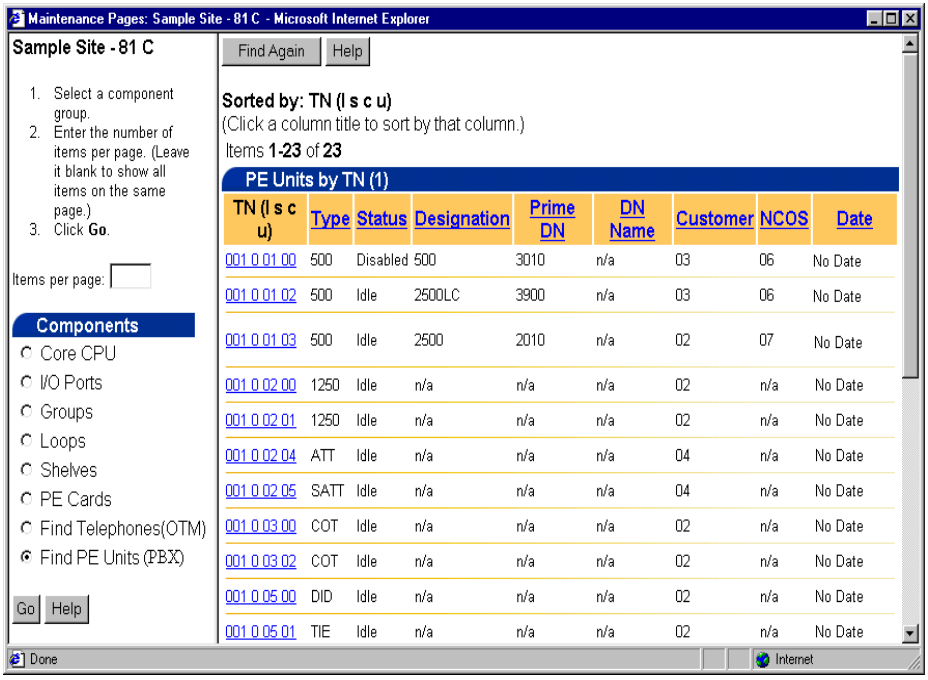
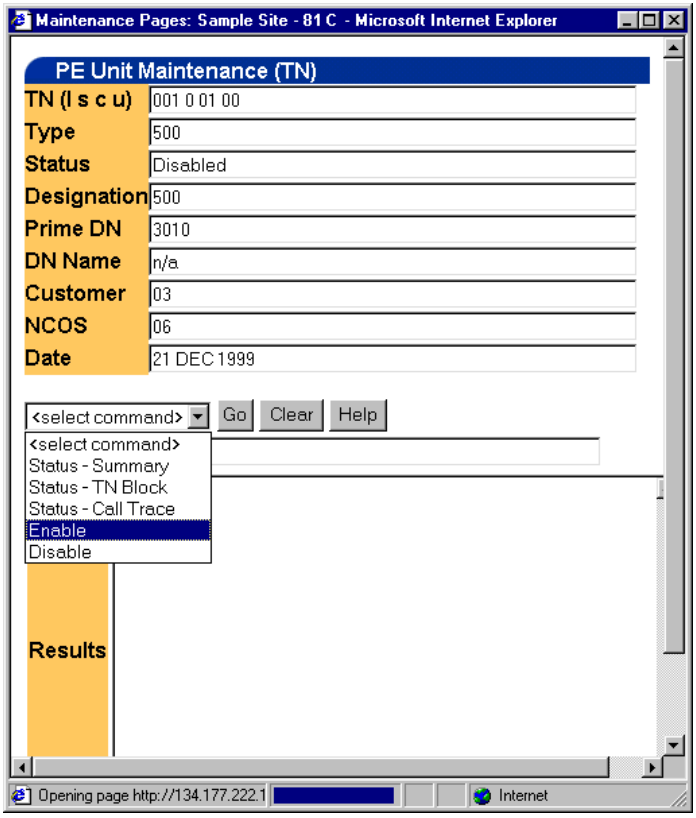

Maintenance Pages: Sample Site - 81 C - Microsoft Internet Explorer
Sample Site - 81 C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTh
Find PE Units (PRX)
Find Again
Help
Sorted by: DN
(Click a column title to sort by that column.)
Items 1-145 of 145
PE Units by DN (all)
DN | DN Name | Status | TN (l s c u) | Type | Key | MARP | Designation | Customer | NCOS | Date
| n/a | n/a | n/a | SS25 | n/a | No | n/a | 03 | n/a | No Date
| n/a | n/a | n/a | SS25 | n/a | No | n/a | 04 | n/a | No Date
#1 | n/a | n/a | n/a | FFC - CFWA CFWD | n/a | No | n/a | 02 | n/a | No Date
#2 | n/a | n/a | n/a | FFC - SPCC | n/a | No | n/a | 02 | n/a | No Date
#3 | n/a | n/a | n/a | FFC - SPCU | n/a | No | n/a | 02 | n/a | No Date
Done
Internet

Figure 377
PE Units Find Results (by TN)


Maintenance Pages: Sample Site - 81 C - Microsoft Internet Explorer
Sample Site - 81 C
1. Select a component group.
2. Enter the number of items per page. (Leave it blank to show all items on the same page.)
3. Click Go.
Items per page:
Components
Core CPU
I/O Ports
Groups
Loops
Shelves
PE Cards
Find Telephones(OTM)
Find PE Units (PBX)
Go
Help
Find Again
Help
Sorted by: TN (l s c u)
(Click a column title to sort by that column.)
Items 1-23 of 23
PE Units by TN (1)
TN (l s c u) | Type | Status | Designation | Prime DN | DN Name | Customer | NCOS | Date
001 0 01 00 | 500 | Disabled | 500 | 3010 | n/a | 03 | 06 | No Date
001 0 01 02 | 500 | Idle | 2500LC | 3900 | n/a | 03 | 06 | No Date
001 0 01 03 | 500 | Idle | 2500 | 2010 | n/a | 02 | 07 | No Date
001 0 02 00 | 1250 | Idle | n/a | n/a | n/a | 02 | n/a | No Date
001 0 02 01 | 1250 | Idle | n/a | n/a | n/a | 02 | n/a | No Date
001 0 02 04 | ATT | Idle | n/a | n/a | n/a | 04 | n/a | No Date
001 0 02 05 | SATT | Idle | n/a | n/a | n/a | 04 | n/a | No Date
001 0 03 00 | COT | Idle | n/a | n/a | n/a | 02 | n/a | No Date
001 0 03 02 | COT | Idle | n/a | n/a | n/a | 02 | n/a | No Date
001 0 05 00 | DID | Idle | n/a | n/a | n/a | 02 | n/a | No Date
001 0 05 01 | TIE | Idle | n/a | n/a | n/a | 02 | n/a | No Date
Done
Internet

3 Click a DN or a TN. A new browser window appears (Figure 378). This example shows the maintenance page for TN 001 0 01 00.

Figure 378
Viewing PE Unit data



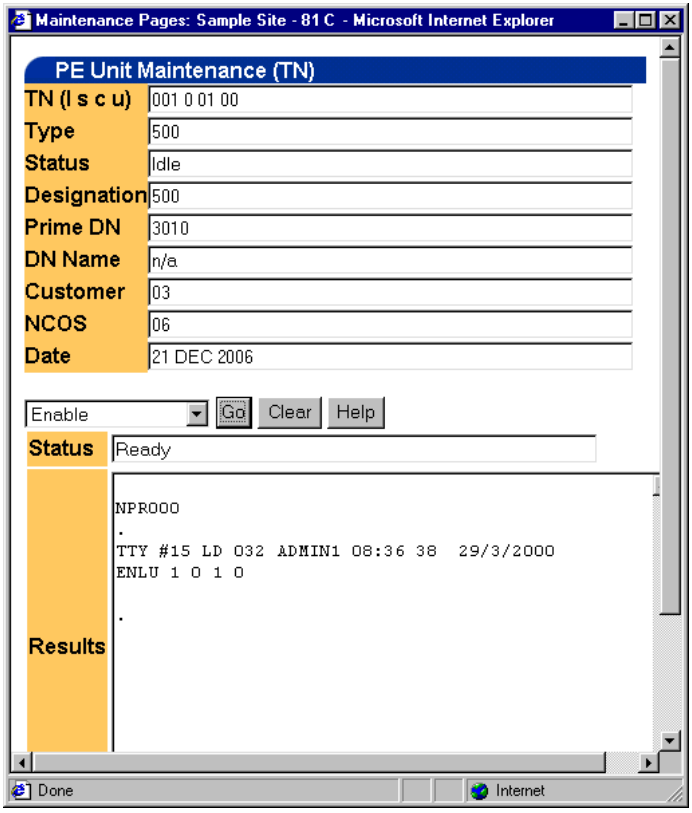
4 Select a command from the drop-down list, and then click **Go**.

The command status goes through the following sequence:

- Ready
- Logging In...
- Retrieving Results...
- Updating Status...
- Logging Out...
- Ready

In this example, the Enable command is selected. Figure 379 shows that the status of this unit has been updated from disabled in Figure 378 to idle in Figure 379.

Figure 379
PE unit data after applying enable command



5 Select another command, or close the browser window.

Web-based alarm management provides a list of alarms and events from multiple systems and devices.

End of Procedure

Web Station

The Web Station heading in the OTM Web navigator tree provides links to the Telephones pages, the Directory Update page, and the Sync Tasks and Logs page.

Telephones

The Telephones pages are used to find a telephone or a group of telephones and perform administrative tasks on them. Use the Find Telephones page to locate the telephone(s) that you want to administer. The results of the Find operation appear in the Find Results page. From the Find Results page, you can access the telephone pages for an individual telephone.

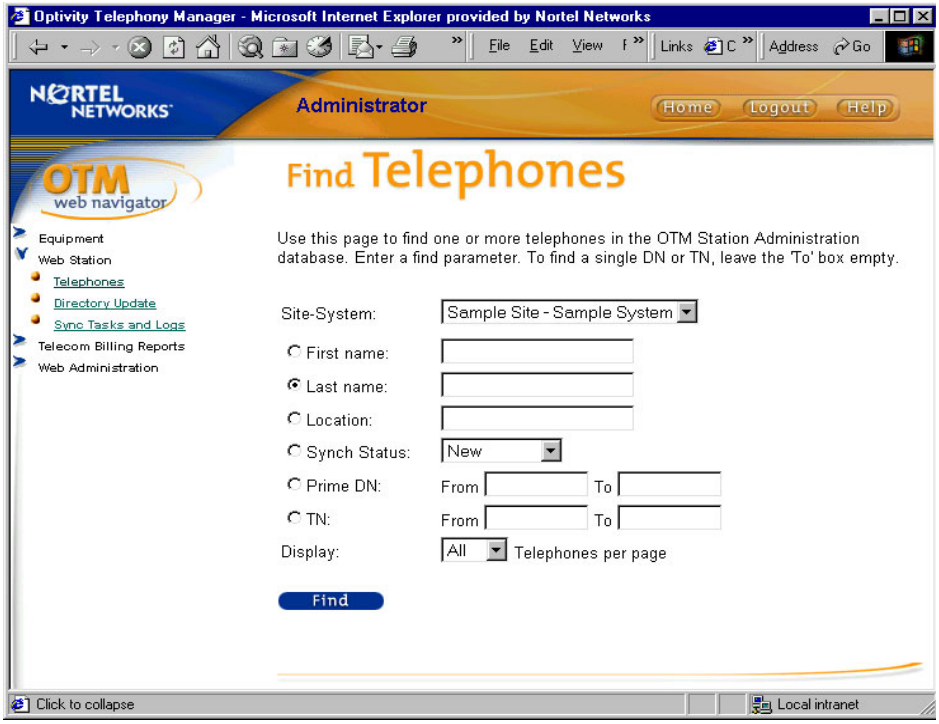
The Find Telephones page (Figure 380) allows you to search for telephones in the OTM station database. If allowed by the system administrator, other user groups, typically HelpDesk users, may also have access to this page. See "User groups" on page 854. To launch the Find Telephones page, click the Telephones link located under Web Station in the OTM Web Navigator tree. Select a system, and enter the desired search criteria. The search returns a list of telephones.

- The drop-down list of systems contains all systems supported by this web site. The list contains both the site and system names as defined in the OTM Windows Navigator.
- The station database search only retrieves Prime DNs.
- The default search is by Last Name.

Leave the text box empty to perform a find all operation. Do not use the wildcard character "*" as you do in Directory Update.

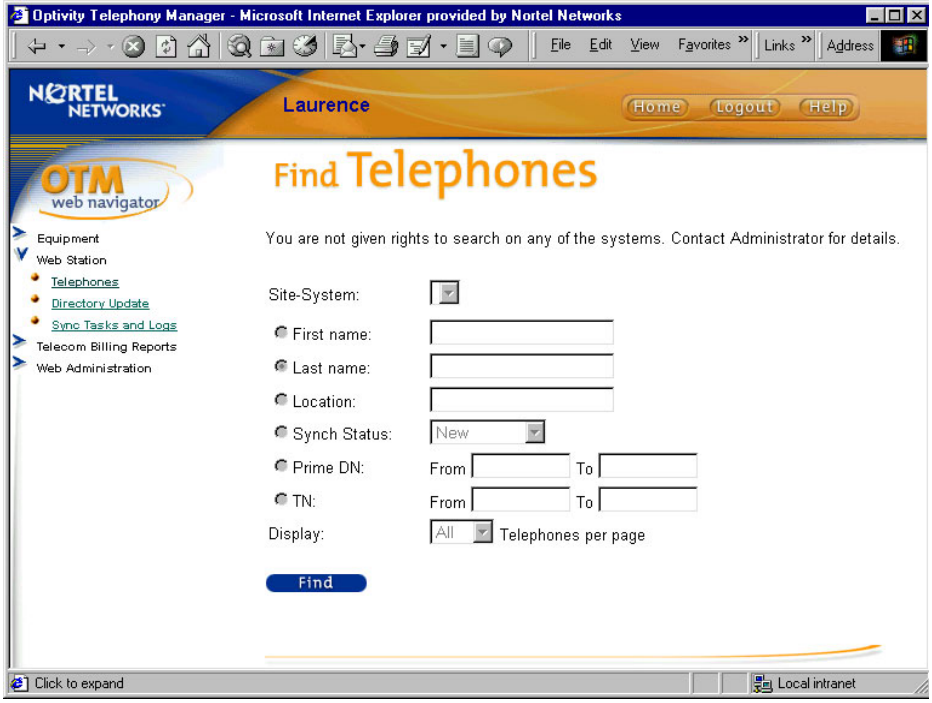
Telephones is a Web Navigator level application; however, access to particular sites and systems can be controlled at the User Group level. To accomplish this, set the Telephones application to "ReadWrite," and set the Web Station application for each site-system to "ReadWrite" or "Access Denied," as appropriate. The systems for which access is denied do not appear in the Site-System drop down list.

Figure 380
OTM Administrator Find Telephones search page



If a user group has access to the Find Telephones page but does not have access to the Web Station Admin application for any system, the Find Telephones page appears (Figure 381). All elements are disabled and a message at the top of the page explains the problem.

Figure 381
Find Telephones page with no system access

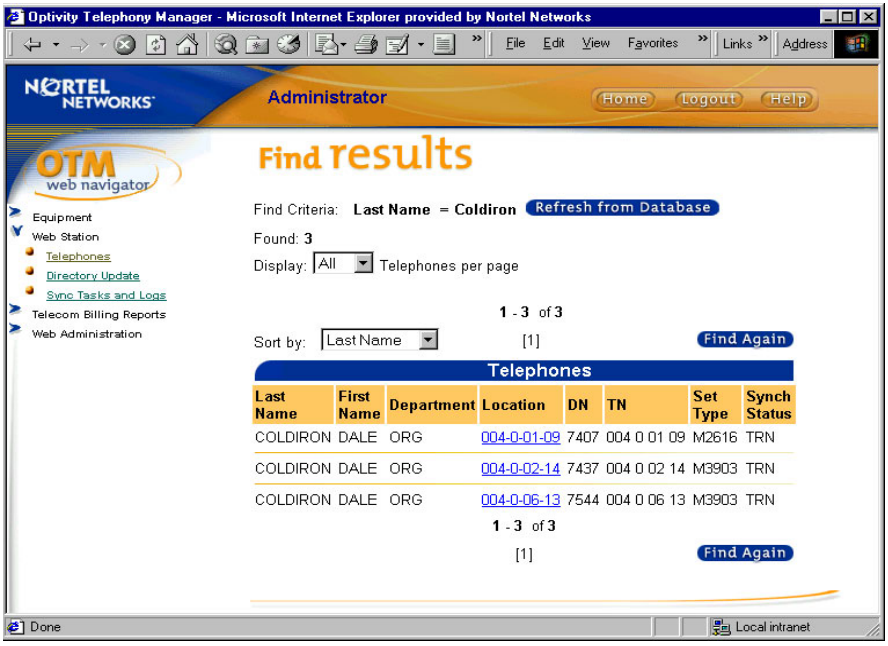


Find results page

The Find results page as shown in Figure 382, displays the list of telephones matching the search parameters.

- By clicking on the Location link, you open up a new browser window, which displays the Telephone pages for the telephone set. These are the same pages that appear when a desktop user displays his telephone using Web Desktop Services (see "Web Desktop Services" on page 867).
- Above the results, the number of items found and the numbers associated with the currently displayed items appears.
- You can sort on any field via the "Sort by" drop-down list on the Find Results page. When you select a new sort, the results appear starting at the first page.
- Click **Find Again** to go back to the Find Telephones page.
- If there are no telephones matching the search parameters, a "Found None" message appears with a Find Again button (that takes you back to the Find Telephones page).

Figure 382.
OTM Administrator Find results page


Optivity Telephony Manager - Microsoft Internet Explorer provided by Nortel Networks
File Edit View Favorites Links Address
NORTEL NETWORKS
Administrator
Home Logout Help
OTM web navigator
Equipment
Web Station
Telephones
Directory Update
Sync Tasks and Logs
Telecom Billing Reports
Web Administration
Find results
Find Criteria: Last Name = Coldiron Refresh from Database
Found: 3
Display: All Telephones per page
1 - 3 of 3
Sort by: Last Name [1] Find Again
Telephones
Last Name First Name Department Location DN TN Set Type Synch Status
COLDIRON DALE ORG 004-0-01-09 7407 004 0 01 09 M2616 TRN
COLDIRON DALE ORG 004-0-02-14 7437 004 0 02 14 M3903 TRN
COLDIRON DALE ORG 004-0-06-13 7544 004 0 06 13 M3903 TRN
1 - 3 of 3
[1] Find Again
Done
Local intranet

After you modify a telephone's location on the General page in the Telephone pages, you should click **Refresh** from Database on the Find Results page.

Telephone General page

The following information appears on the Telephone General page (Figure 383 on page 802):

- **Station Location** - A text field similar in purpose to the System field. You may want to use this to provide more user friendly names.
- **System** - Identifies the site, system, and customer number, if applicable, where the phone is connected. This information is retrieved from OTM common services and appears in the format “Site - System - Customer x”.
- **Phone type** (M2317, M2616, M3903, and so on)
- **Terminal Number** (TN): Address of the telephone
- **Display Based Modules**: (M3904) Number of Display Based Modules configured for this phone type.
- **Key Based Modules**: (M3904 and M3905) Number of Key Based Modules configured for this phone type.
- **IP Key Expansion Modules (KEM)** - (Nortel IP Phone 2002 and IP Phone 2004) The number of Key Expansion Modules connected to the IP Phone. The acceptable range is from zero to two, with 0 as the default.
- **Designation** - A unique 1–6 character telephone identifier. This data is stored in station data and the overlays. This field is often used to identify the location of the phone within the building (for example, cable pair), and is the response to the prompt DES in LD 10 and LD 11.
- **Zone** - The IP Voice Zone number indicates the geographic location of Ethersets.

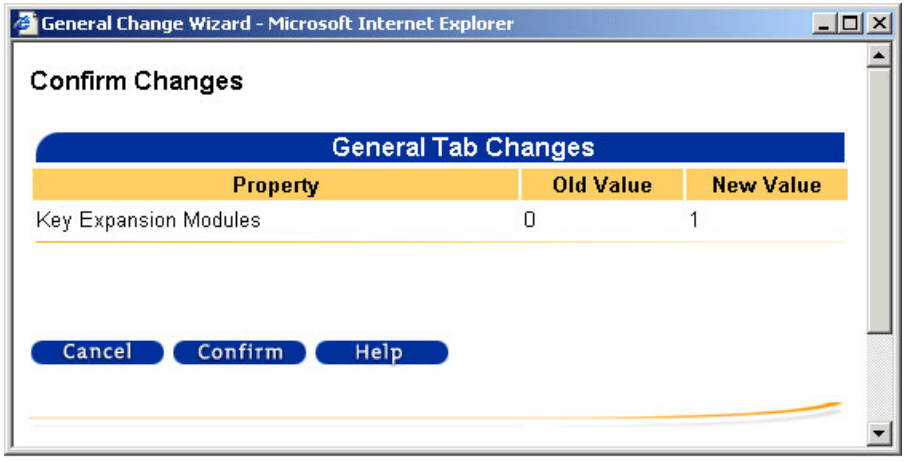
Figure 383
Telephone General page

The following fields cannot be changed by users if allowed by their User Group's Telephone access properties:

- System
- Phone types
- Terminal number.

If the user changes one or more of these fields and clicks Submit, the Confirm Changes dialog box opens (Figure 384).

Figure 384
Confirm changes to the General Phone Properties page



The user verifies the information and clicks Confirm. If there are no errors, a change confirmation page opens. See "Change confirmation pages" on page 872 for more information. If there is an error in the proposed change, error details appears instead of the change confirmation page.

Telephone Keys page

The Telephone Keys page displays a graphical layout of the function keys assigned to the telephone. The layout varies for different telephone types.

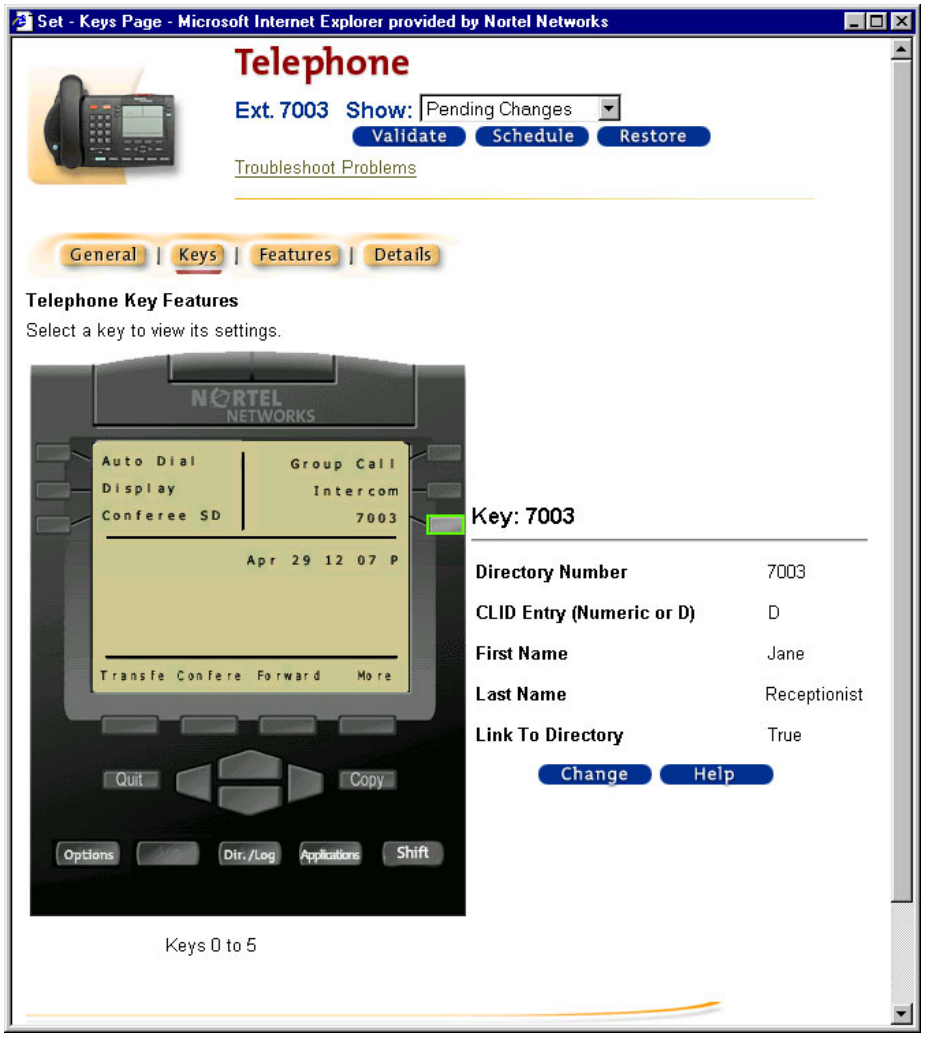
All current feature key assignments are always visible. The key labels on the graphic match the labels in Station Administration. For M3900 series and IP Phones these labels match the soft labels on the set, and the text is shortened to 7 characters. When the page first appears, key 0 is selected. You can select other keys by clicking on a key. Click the Shift key to access the second layer of keys on the M3903, M3904, and IP Phones. From the second layer of keys, you can access the display-based or key-based expansion module keys. Figure 385 shows an example of the first layer of keys on the Telephone Keys page for an M3904 telephone.

When a key is selected, the following occurs:

- The key is highlighted. The method used to highlight depends on the phone type.
- The name of the key and its configurable parameters, if any, appear beside the telephone graphic.

A Help button takes you to help on how to use the selected key.

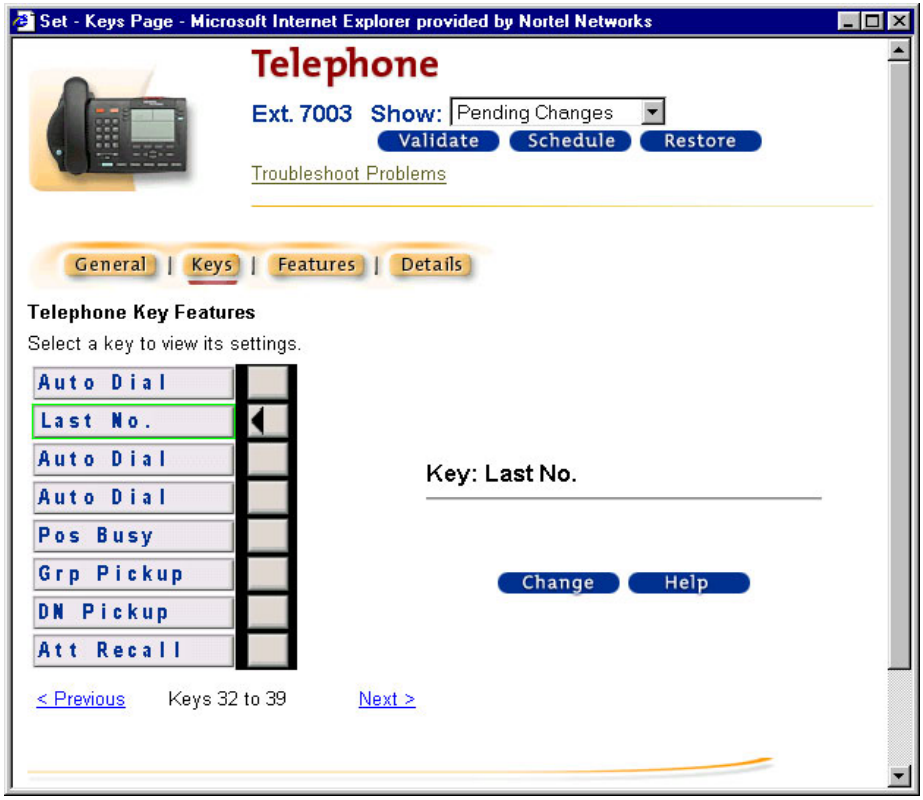
Figure 385
Telephone Keys page



If the telephone has a display-based expansion module, a graphic indicates which set of keys appears. Use the Next and Previous buttons to “scroll” the graphic from one set of keys to the other.

Figure 386 shows the user interface for the keys associated with a display-based expansion module attached to the M3904 shown in Figure 385.

Figure 386
Telephone Keys page — display-based expansion module keys

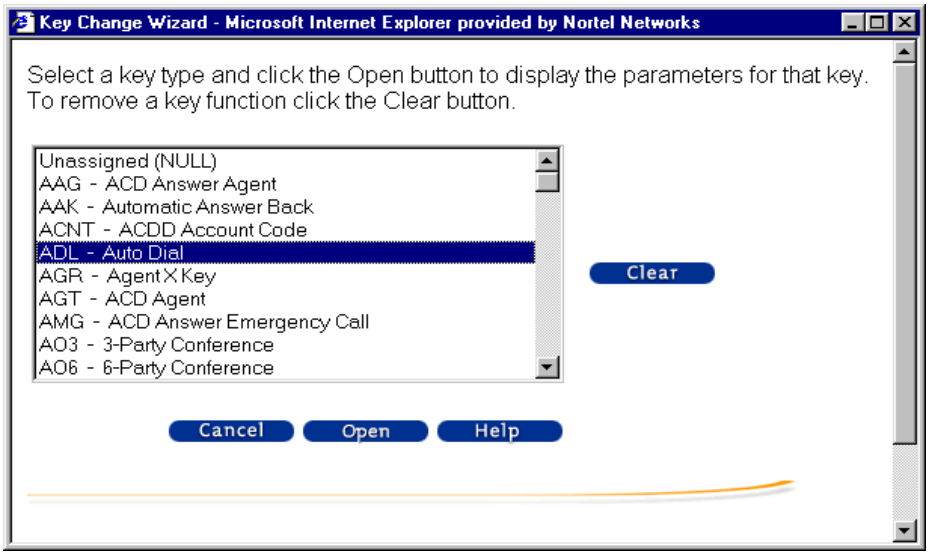


Changing a key

When you click **Change** after selecting a key, a new browser window opens with the appropriate controls for changing the key you selected.

In this browser window, a list of the possible key choices appears (Figure 387). This list is dynamic and is based on both the telephone type and the key selected. For example, key 17 on an M2317 telephone must be a transfer key.

Figure 387
Select Auto Dial key type


Key Change Wizard - Microsoft Internet Explorer provided by Nortel Networks
Select a key type and click the Open button to display the parameters for that key.
To remove a key function click the Clear button.
Unassigned (NULL)
AAG - ACD Answer Agent
AAK - Automatic Answer Back
ACNT - ACDD Account Code
ADL - Auto Dial
AGR - Agent X Key
AGT - ACD Agent
AMG - ACD Answer Emergency Call
AO3 - 3-Party Conference
AO6 - 6-Party Conference
Clear
Cancel
Open
Help

The Help button is context-sensitive and accesses the information in the Input/Output guide on configuring a key for the selected feature or service.

The key's parameters, if any, appear on subsequent pages of the wizard.

The Clear button removes the key function and takes the user to the next page in the key change wizard. As shown in Figure 387, if the telephone key that you have selected is currently unassigned (null), the Clear button does not appear.

Changing the parameters of an Auto Dial key

Use the following procedure to change the telephone number assigned to an Auto Dial key:

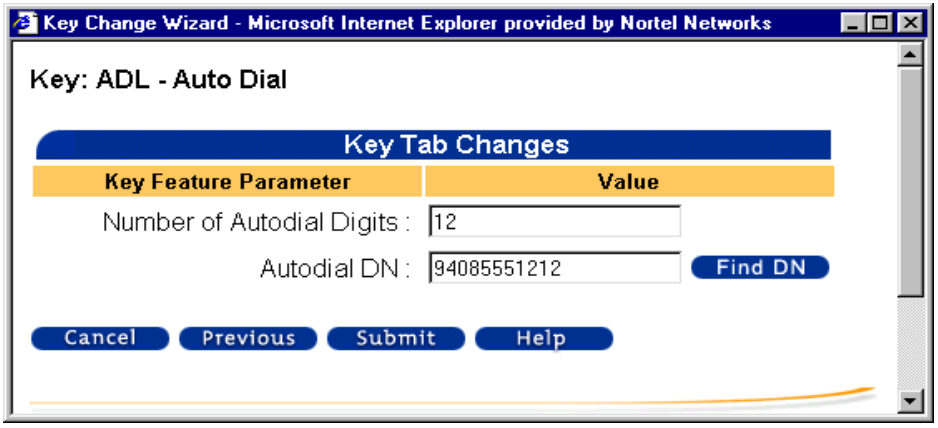
Procedure 160
Changing the parameters of an Auto Dial key

1. Click an Auto Dial key in the graphic on the Telephone Keys page.
2. Click **Change**. The Key Change Wizard launches.
3. Click **ADL — Auto Dial** in the list of key types (Figure 387).
4. Click **Open**.
5. Type the new maximum number of autodial digits and the new Autodial DN in the edit boxes (Figure 388).

If you change the Number of Auto Dial digits to a value that is greater than the default number in the system, or if you enter an Auto Dial Number that has more digits than the default value, you receive a validation error.

You use the Find DN button to look up Directory Numbers. It appears whenever there is a DN edit box. For information on using the Find DN button, see "Finding Directory Numbers" on page 817.

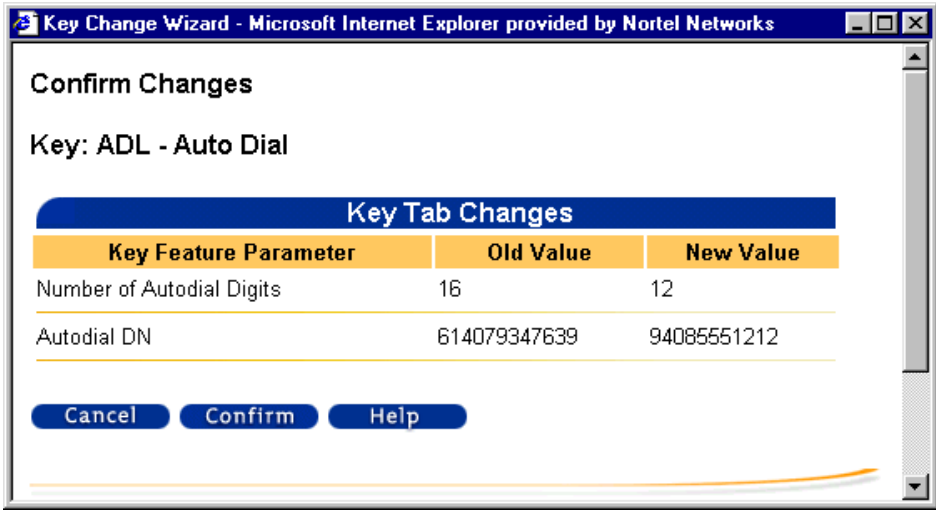
Figure 388
Autodial key change wizard



6 Click **Submit**.

The key change summary page opens (Figure 389).

Figure 389
ADL key change summary



7 Click **Confirm**.

A confirmation page appears. See “Change confirmation pages” on page 872.

End of Procedure

Changing the parameters of an MCR DN key

Use the following procedure to change the first name and last name parameters associated with an MCR DN key:

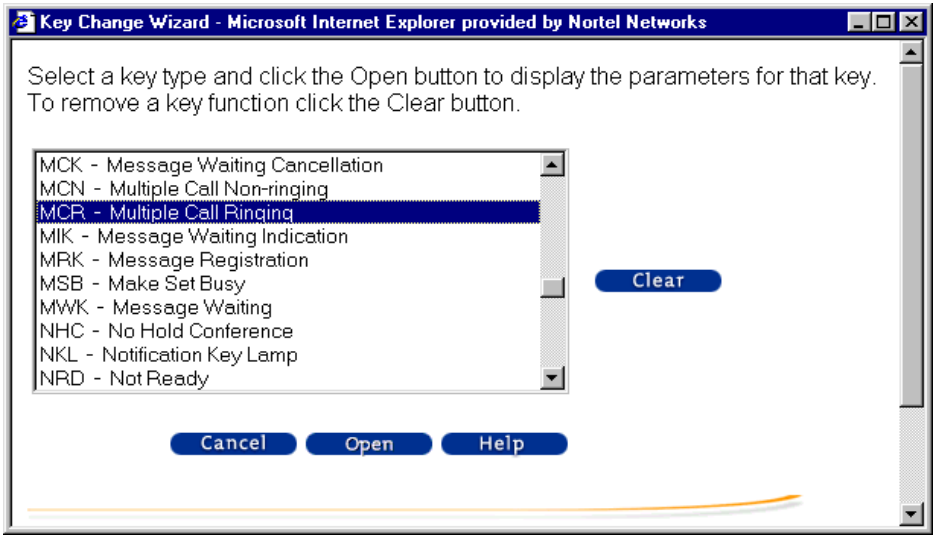
Procedure 161
Changing the parameters of an MCR DN key

1 Click an MCR DN key in the graphic on the Telephone Keys page (Figure 385 on page 804).

2 Click **Change**.

The Key Change Wizard launches. The current key type, “MCR - Multiple Call Ringing,” is highlighted (Figure 390).

Figure 390
Select Multiple Call Ringing key type


Key Change Wizard - Microsoft Internet Explorer provided by Nortel Networks
Select a key type and click the Open button to display the parameters for that key.
To remove a key function click the Clear button.
MCK - Message Waiting Cancellation
MCN - Multiple Call Non-ringing
MCR - Multiple Call Ringing
MIK - Message Waiting Indication
MRK - Message Registration
MSB - Make Set Busy
MWK - Message Waiting
NHC - No Hold Conference
NKL - Notification Key Lamp
NRD - Not Ready
Clear
Cancel
Open
Help

3 Since you are not changing the key type, click **Open**.

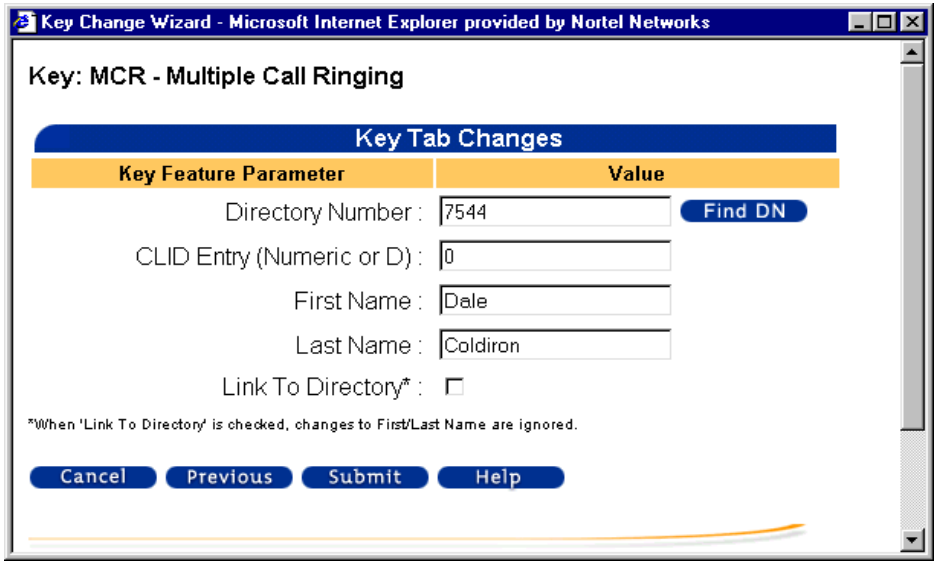
The key change wizard displays the current parameters for the selected key (Figure 391)

You can only modify the DN, CPND, and CLID. You may not view or change the DN's Voice Mailbox, ANI, or MARP.

When the Name Display Link to Directory check box is selected in Station Administration, the values for the First Name and Last Name fields are obtained from the directory and are not editable..

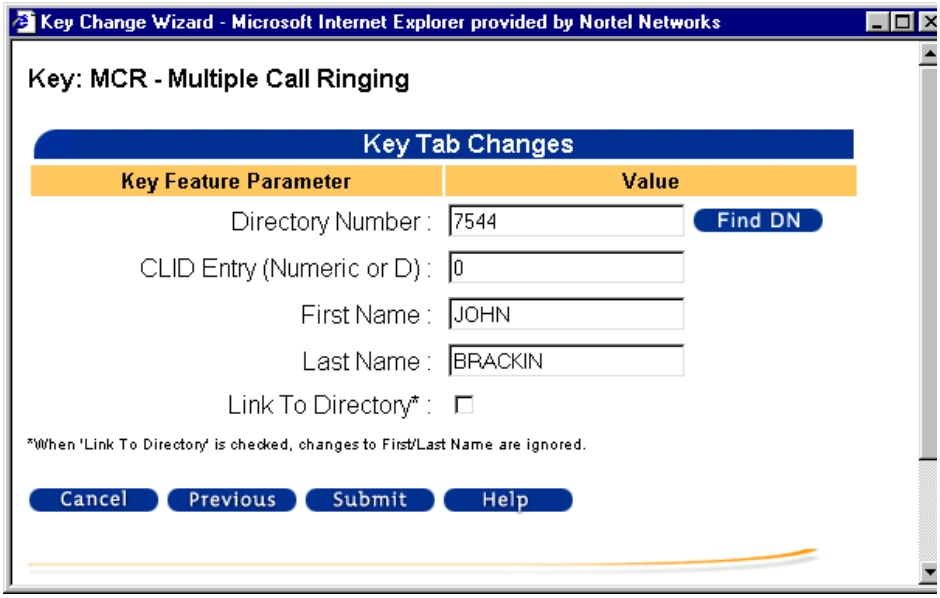
If the key change wizard does not display a Directory Number, or if you want to change the Directory Number, see "Finding Directory Numbers" on page 817.

Figure 391
Current parameters for Multiple Call Ringing DN key



4 Change the First Name and Last Name (Figure 392).

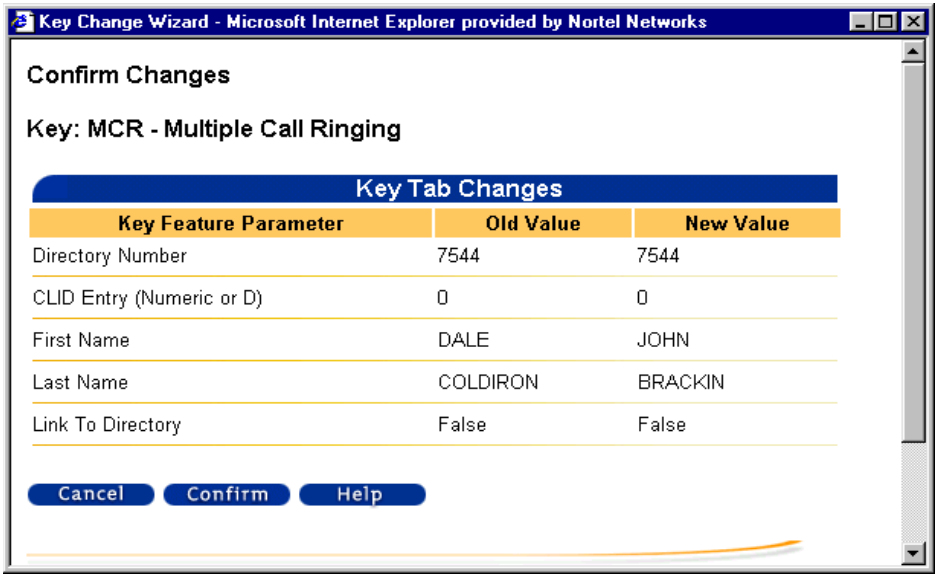
Figure 392
Changed parameters for Multiple Call Ringing DN key



5 Click **Submit**.

A summary page opens that displays your changes (Figure 393).

Figure 393
MCR key change summary page



6 Click **Confirm**. A confirmation page appears. See “Change confirmation pages” on page 872.

End of Procedure

Changing a feature key type

Use the following procedure to change a Conference key to a Call Forward key:

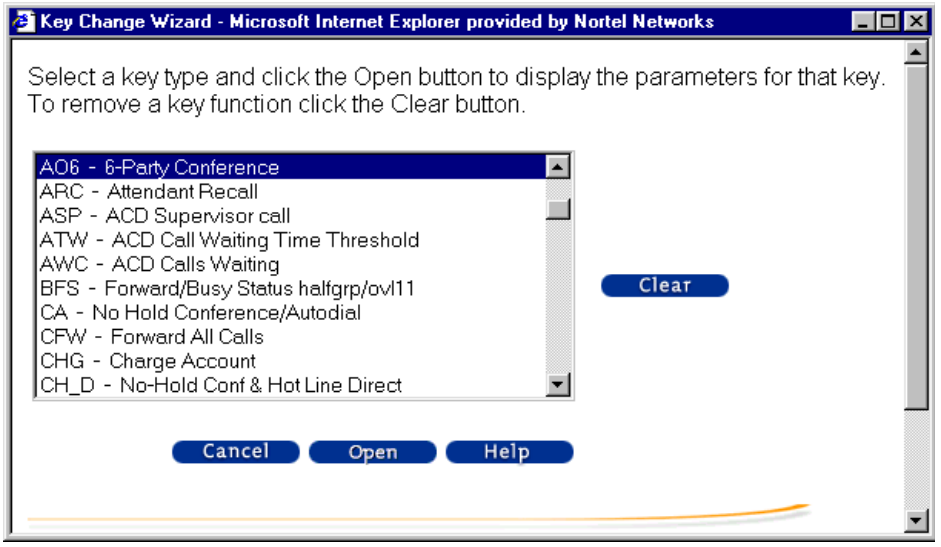
Procedure 162
Changing a feature key type

1 Click the Conference key in the graphic on the Telephone Keys page (Figure 385 on page 804).

2 Click **Change**.

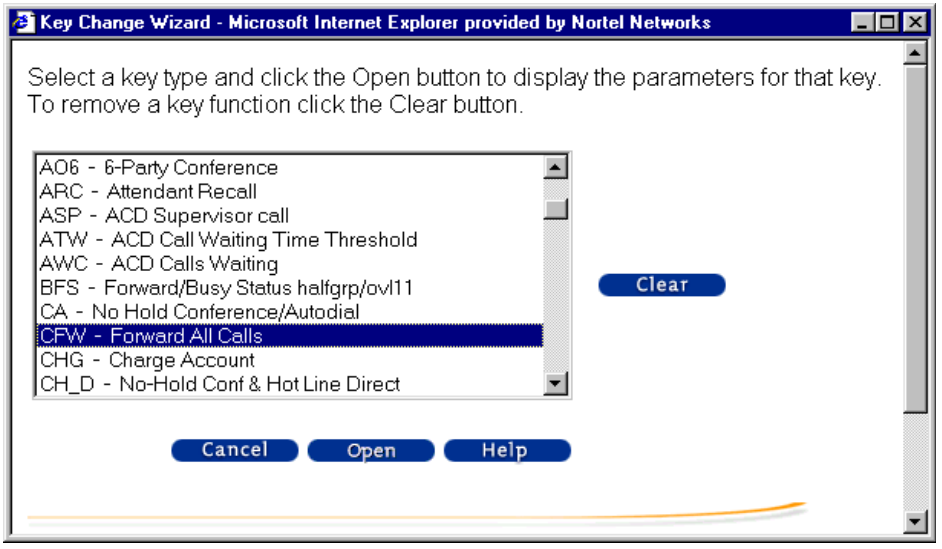
The Key Change Wizard launches. The current key type is highlighted (Figure 394).

Figure 394
Key Change Wizard displaying current key type


Key Change Wizard - Microsoft Internet Explorer provided by Nortel Networks
Select a key type and click the Open button to display the parameters for that key.
To remove a key function click the Clear button.
AO6 - 6-Party Conference
ARC - Attendant Recall
ASP - ACD Supervisor call
ATW - ACD Call Waiting Time Threshold
AWC - ACD Calls Waiting
BFS - Forward/Busy Status halfgrp/ovl11
CA - No Hold Conference/Autodial
CFW - Forward All Calls
CHG - Charge Account
CH_D - No-Hold Conf & Hot Line Direct
Clear
Cancel
Open
Help

3 Click **CFW - Forward All Calls** in the list of key types (Figure 395).

Figure 395
Select the Forward All Calls key type

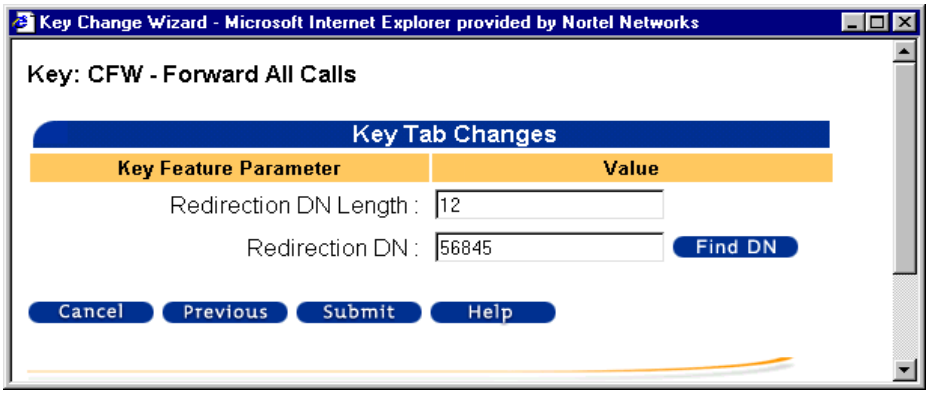

Key Change Wizard - Microsoft Internet Explorer provided by Nortel Networks
Select a key type and click the Open button to display the parameters for that key.
To remove a key function click the Clear button.
AO6 - 6-Party Conference
ARC - Attendant Recall
ASP - ACD Supervisor call
ATW - ACD Call Waiting Time Threshold
AWC - ACD Calls Waiting
BFS - Forward/Busy Status halfgrp/ovl11
CA - No Hold Conference/Autodial
CFW - Forward All Calls
CHG - Charge Account
CH_D - No-Hold Conf & Hot Line Direct
Clear
Cancel
Open
Help

4 Click **Open**.

5 Enter the Redirection DN Length and Redirection DN in the edit boxes (Figure 396).

When changing a key type, the default values do not appear. If you enter a Redirection DN length that is greater than the default value in the Meridian 1 or CS 1000S system, or if you enter a Redirection DN that has more digits than the default value, you receive a validation error.

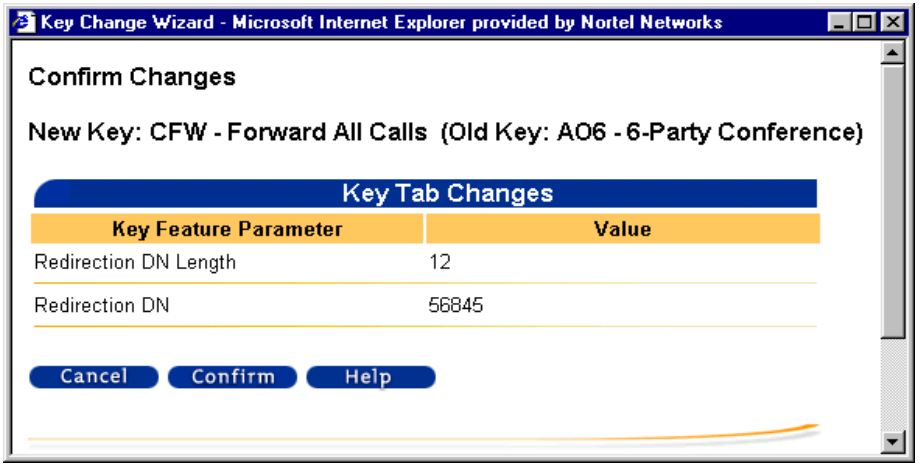
Figure 396
Forward All Calls Key Change Wizard



6 Click **Submit**.

The key change summary page opens (Figure 397).

Figure 397
CFW key change summary page



7 Click **Confirm**.

A confirmation page appears. See “Change confirmation pages” on page 872.

End of Procedure

Clearing a key feature

Use the following procedure to remove the function associated with a key, creating a blank, or unassigned, key:

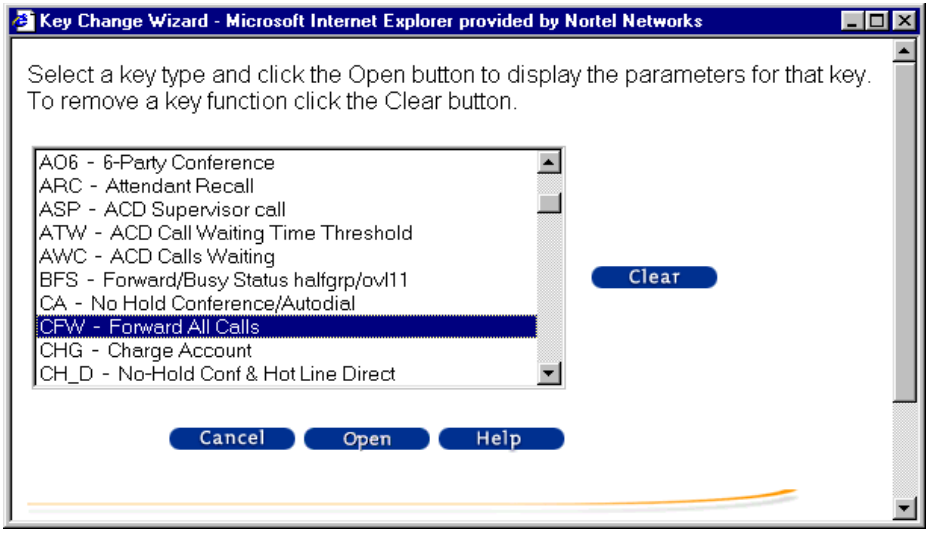
Procedure 163
Clearing a key feature

1 Click a key in the graphic on the Telephone Keys page (Figure 385).

2 Click **Change**.

The Key Change Wizard launches. The function associated with the selected key is highlighted in the list (Forward All Calls in this example) (Figure 398).

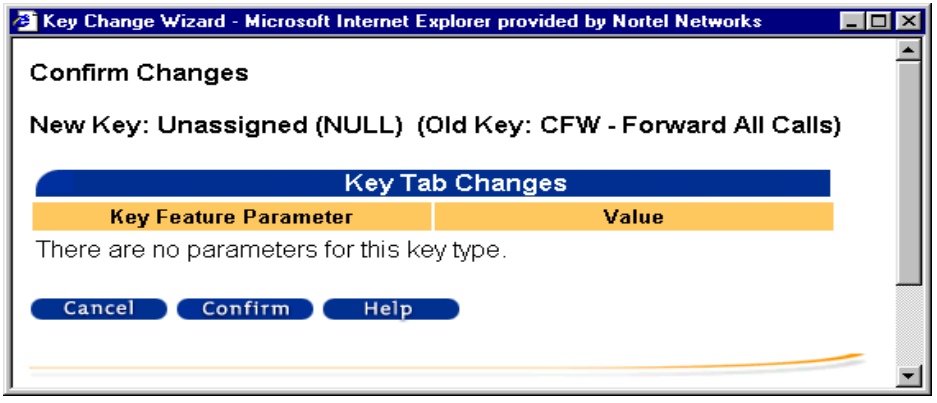
Figure 398
Current key function displayed in the Key Change Wizard


Key Change Wizard - Microsoft Internet Explorer provided by Nortel Networks
Select a key type and click the Open button to display the parameters for that key.
To remove a key function click the Clear button.
AO6 - 6-Party Conference
ARC - Attendant Recall
ASP - ACD Supervisor call
ATW - ACD Call Waiting Time Threshold
AWC - ACD Calls Waiting
BFS - Forward/Busy Status halfgrp/ovl11
CA - No Hold Conference/Autodial
CFW - Forward All Calls
CHG - Charge Account
CH_D - No-Hold Conf & Hot Line Direct
Clear
Cancel
Open
Help

3 Click **Clear**.

The key change summary page appears (Figure 399).

Figure 399
Unassigned key change summary page


Key Change Wizard - Microsoft Internet Explorer provided by Nortel Networks
Confirm Changes
New Key: Unassigned (NULL) (Old Key: CFW - Forward All Calls)
Key Tab Changes
Key Feature Parameter
Value
There are no parameters for this key type.
Cancel
Confirm
Help

4 Click **Confirm**.

A confirmation page appears. See “Change confirmation pages” on page 872.

End of Procedure

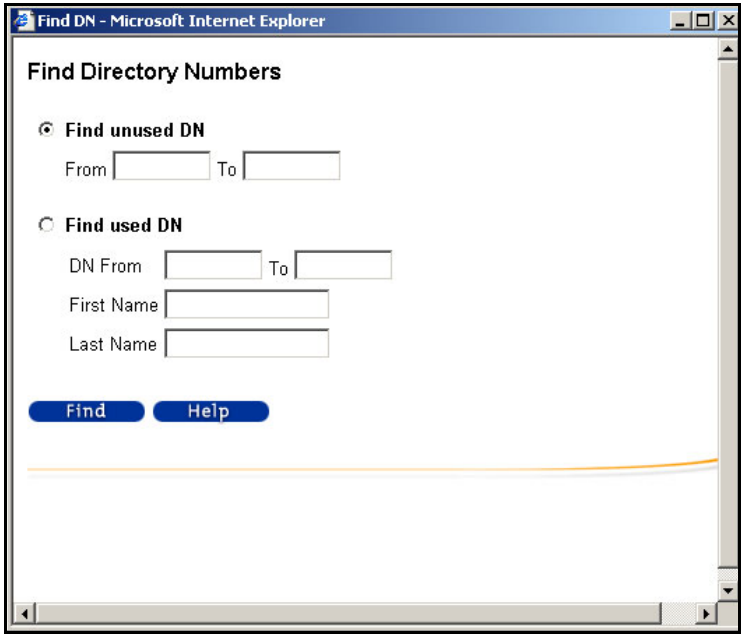
Finding Directory Numbers

You use the Find DN button to look up used or unused Directory Numbers. It appears next to the edit box for any DN key.

Procedure 164
Finding Unused Directory Numbers

1 Click **Find DN** (Figure 391). The Find Directory Numbers page appears (Figure 400).

Figure 400
Find Directory Numbers page



2 Click **Find unused DN**.

3 Enter a range of DNs on which to search.

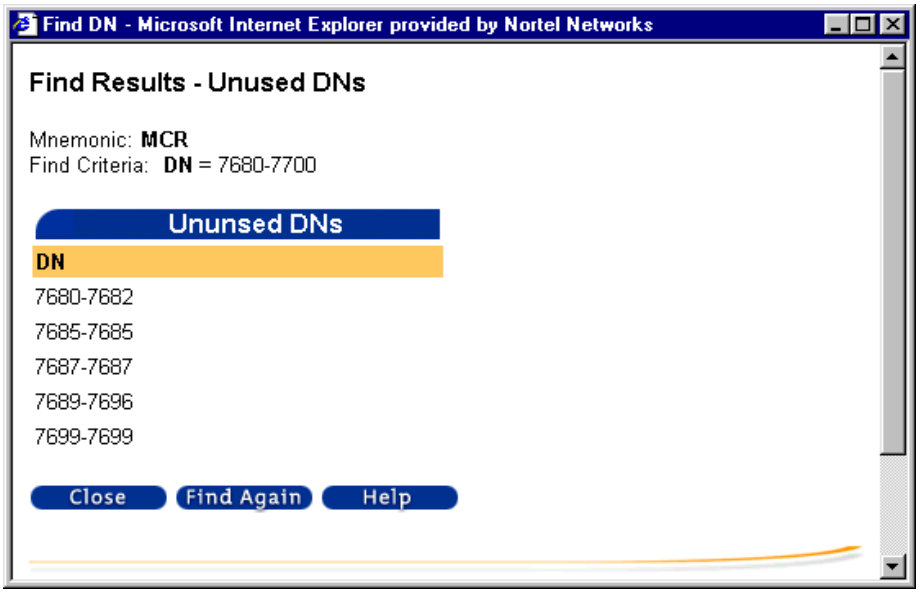
Note: You must have a Numbering Plan defined in the System Properties in OTM Windows Navigator to use the Find unused DNs feature.

If all DNs have been used, the error message, “All DNs are in use” appears.

If the Numbering plan is not defined in the system properties, the error message, “Numbering Plan is empty or not defined for this customer, or does not contain the appropriate DN type” appears.

4 Click **Find**. If unused DNs are found, a page similar to the example shown in Figure 401 appears.

Figure 401
Find results when unused DNs exist



Only the unused DNs belonging to the same site, system, and customer as the telephone are shown.

If you click Find Again, you return to the previous page, and you can enter a different range of DNs.

End of Procedure

Procedure 165
Finding Used Directory Numbers

1 Click **Find DN** (Figure 391). The Find Directory Numbers page opens (Figure 400).

2 Click **Find used DN**.

3 Click the radio button that corresponds to your search criteria.

To search by DN, enter a range of DNs on which to search.

To search by last name, enter the last name of the person whose name is assigned to the DN you are seeking.

To search by first name, enter the first name of the person whose name is assigned to the DN you are seeking.

4 Click **Find**. If DNs that match your search criteria are found, a page similar to the example shown in Figure 402 appears. If there are no DNs that match your search criteria, one of two messages is shown for the cases below:

All DNs have been used (Figure 403).

The Numbering Plan is not defined in system properties(Figure 404).

Figure 402
Find results when there are matching used DNs

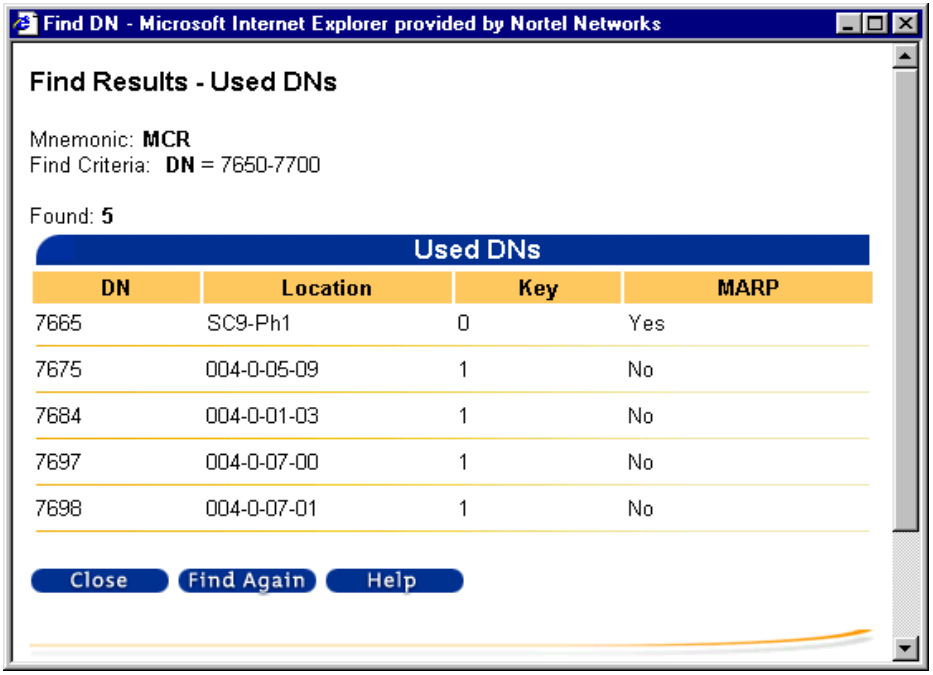


Figure 403
Find results when all DNs are in use

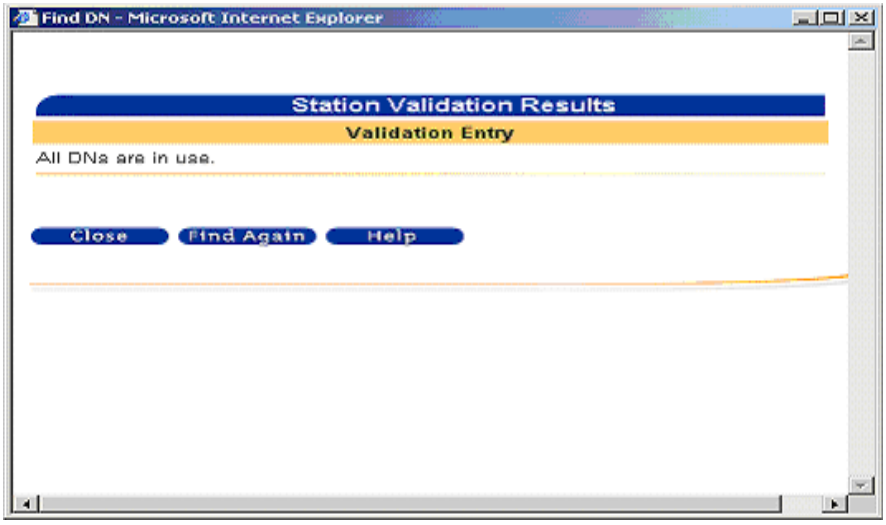
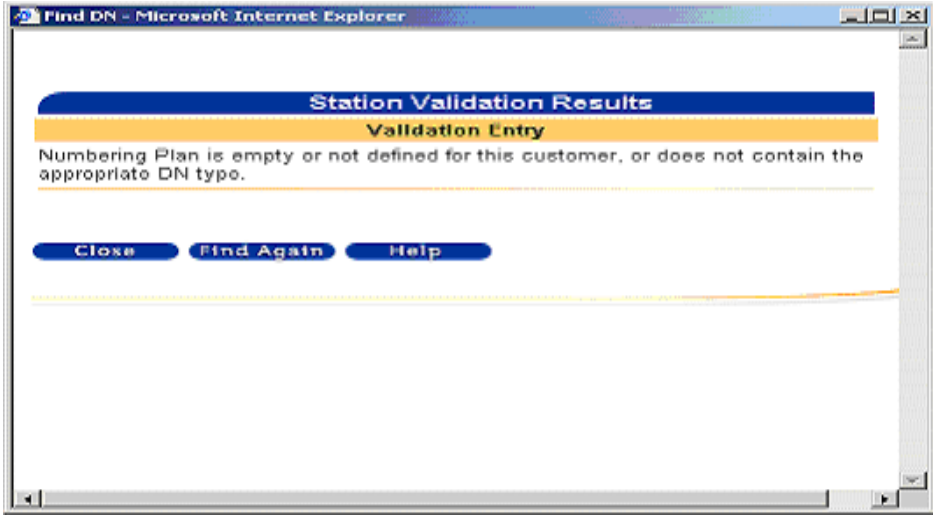


Figure 404
Find results when Numbering Plan is not defined


Find DN - Microsoft Internet Explorer
Station Validation Results
Validation Entry
Numbering Plan is empty or not defined for this customer, or does not contain the appropriate DN typo.
Close
Find Again
Help

End of Procedure

Telephone Features page

The Telephone Features page allows you to view and change features that are not assigned to keys. Features are related to individual prompts in LD 10 or 11, with one or more configurable parameters.

The administrator determines which features the user can see in the list. If the User Group access properties allows changes, the Submit and Reset buttons appear (Figure 405).

Whenever possible, a drop-down list box containing all possible values for the feature is provided. In cases where this is not possible, for example when entering a call forward DN, an edit box is provided.

Figure 405
Telephone Features page

Set - Features Page - Microsoft Internet Explorer provided by Nortel Networks
Telephone
Ext. 7544 Current Configuration
Validate
Troubleshoot Problems
General | Keys | Features | Details
Telephone Features
Change one or more features and click 'Submit'.
1 - 50 of 165
Next
[1] 2 3 4
Submit
Reset
Features
Feature
Description
Value
AAA Automatic Answer Back Denied Help
ABDA CDR on Abandoned Calls Denied Help
ADAY Alternate Redirection by Day 0 Help
ADV Data Port Verification Denied Help
AEFD Alternate External Flexible Call Forward Find DN Help
AEHT Alternate External Hunt DN Find DN Help
AFD Alternate Flexible Call Forward DN Find DN Help
AGRA Agent Greeting Denied Help
AHA Automatic Hold Allowed Denied Help

Telephone Details page

The Telephone Details page provides a summary of the complete telephone configuration. It consists of two tables, one for the keys (Figure 406), and one for the features (Figure 407).

Figure 406
Telephone Details layout (Keys)

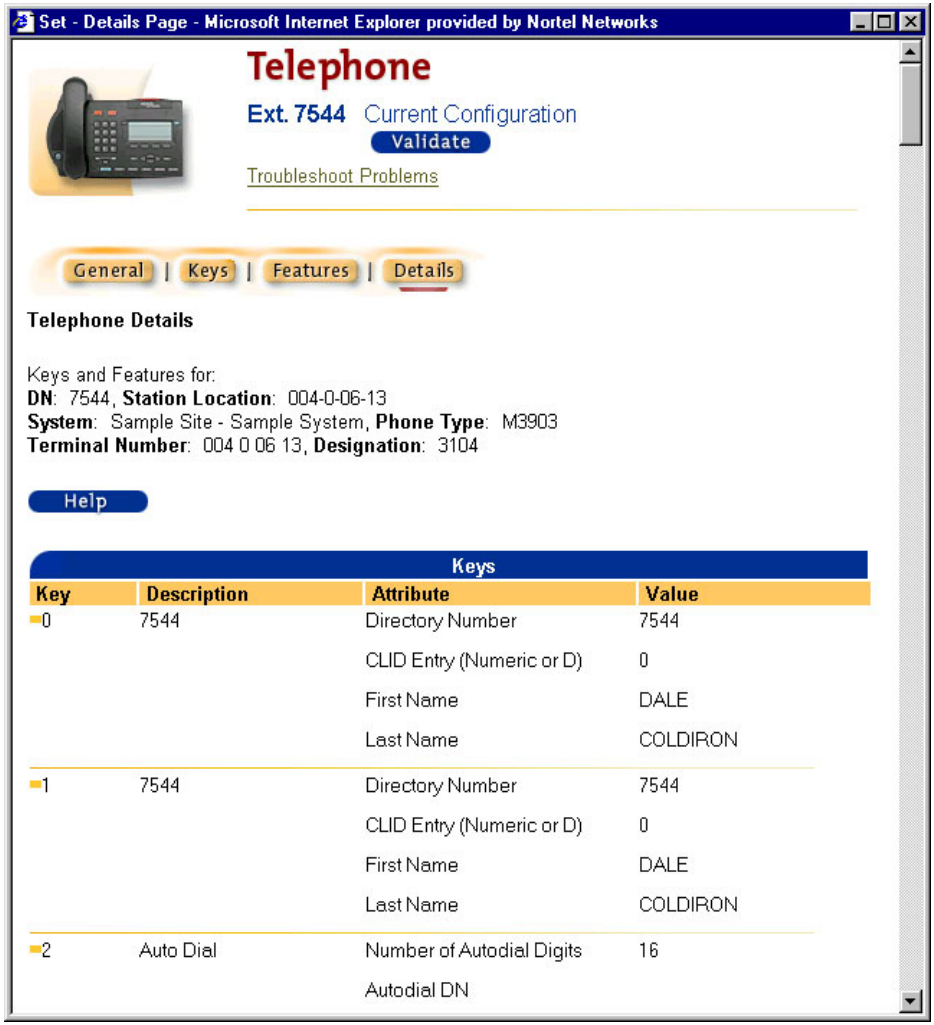
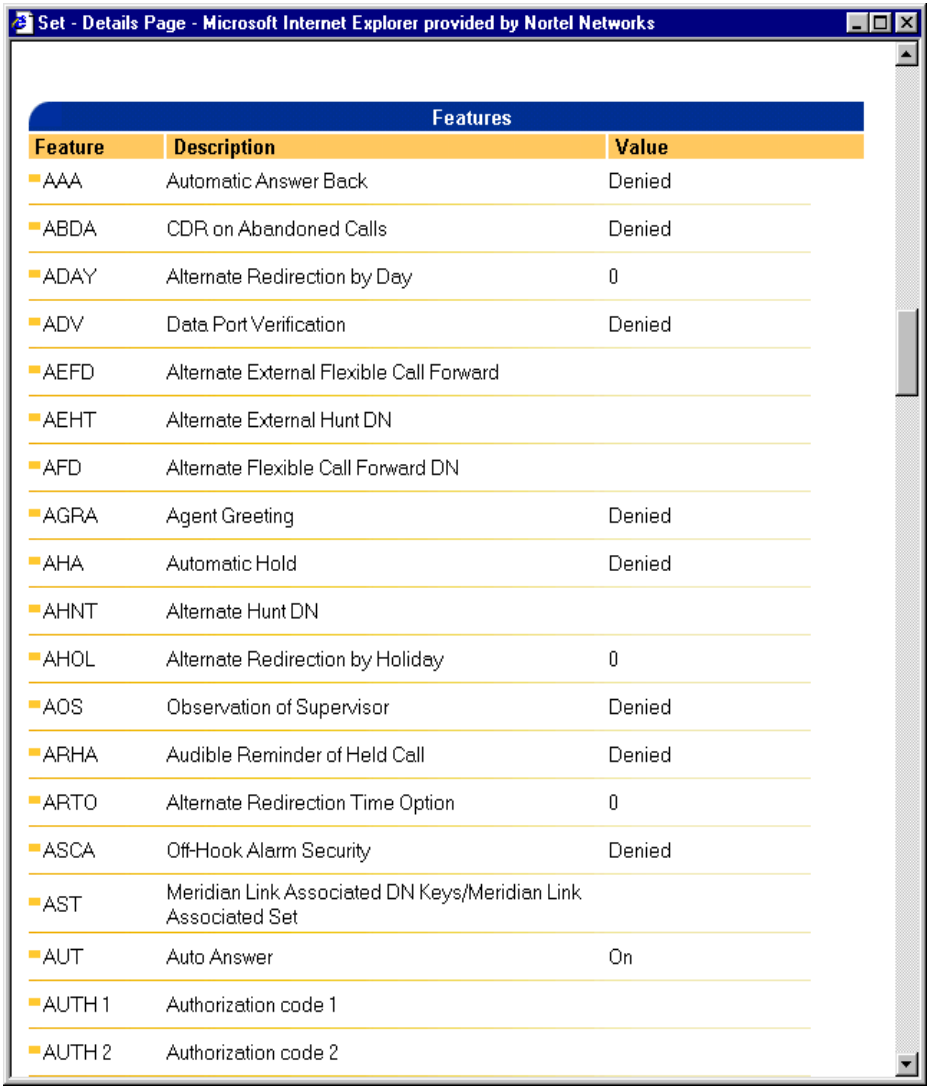

Set - Details Page - Microsoft Internet Explorer provided by Nortel Networks
Telephone
Ext. 7544 Current Configuration
Validate
Troubleshoot Problems
General | Keys | Features | Details
Telephone Details
Keys and Features for:
DN: 7544, Station Location: 004-0-06-13
System: Sample Site - Sample System, Phone Type: M3903
Terminal Number: 004 0 06 13, Designation: 3104
Help
Keys
Key Description Attribute Value
0 7544 Directory Number 7544
CLID Entry (Numeric or D) 0
First Name DALE
Last Name COLDIRON
1 7544 Directory Number 7544
CLID Entry (Numeric or D) 0
First Name DALE
Last Name COLDIRON
2 Auto Dial Number of Autodial Digits 16
Autodial DN

Figure 407
Telephone Details layout (Features)



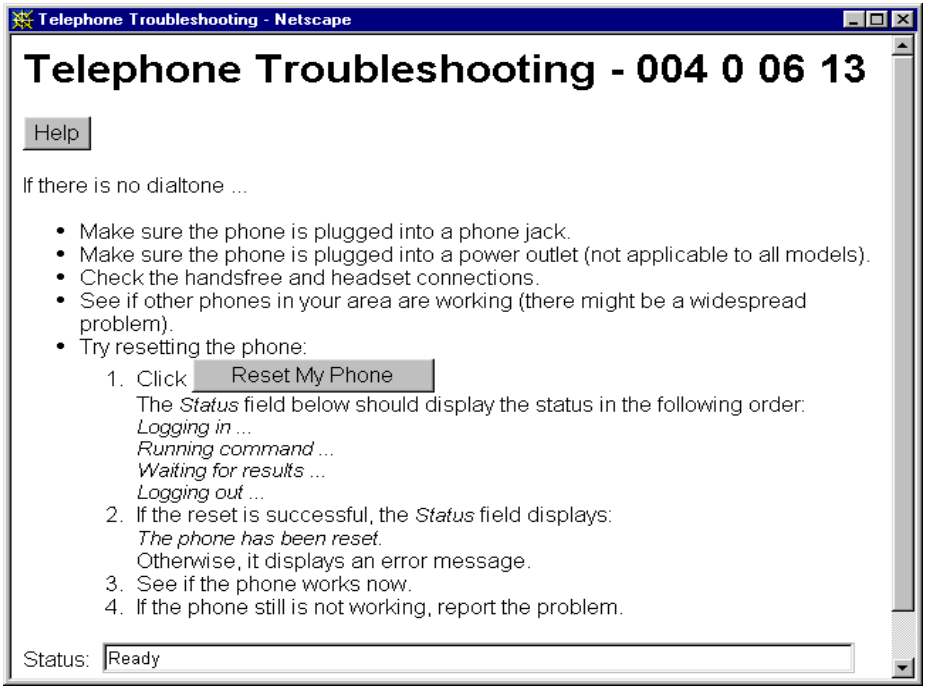
Features		
Feature	**Description**	**Value**
AAA	Automatic Answer Back	Denied
ABDA	CDR on Abandoned Calls	Denied
ADAY	Alternate Redirection by Day	0
ADV	Data Port Verification	Denied
AEFD	Alternate External Flexible Call Forward	
AEHT	Alternate External Hunt DN	
AFD	Alternate Flexible Call Forward DN	
AGRA	Agent Greeting	Denied
AHA	Automatic Hold	Denied
AHNT	Alternate Hunt DN	
AHOL	Alternate Redirection by Holiday	0
AOS	Observation of Supervisor	Denied
ARHA	Audible Reminder of Held Call	Denied
ARTO	Alternate Redirection Time Option	0
ASCA	Off-Hook Alarm Security	Denied
AST	Meridian Link Associated DN Keys/Meridian Link Associated Set	
AUT	Auto Answer	On
AUTH 1	Authorization code 1	
AUTH 2	Authorization code 2	

Telephone Troubleshooting page

The Troubleshoot Problems link, at the top of the Telephone pages, provides access to the Telephone Trouble Shooting page. You can access the Telephone Troubleshooting page from the Telephone pages via the Troubleshoot Problems link. The Telephone Troubleshooting page is shown in Figure 408. The Reset My Phone button performs an enable and status command on this telephone via a Maintenance Windows API.

For the Troubleshoot Problems link to function properly, the user's User Group must be configured to allow access to the switch.

Figure 408
Telephone Troubleshooting page

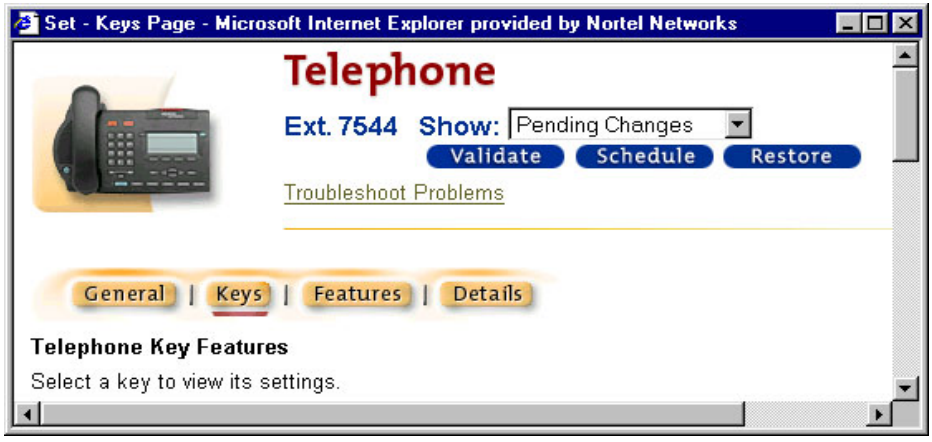

Telephone Troubleshooting - Netscape
Telephone Troubleshooting - 004 0 06 13
Help
If there is no dialtone ...
Make sure the phone is plugged into a phone jack.
Make sure the phone is plugged into a power outlet (not applicable to all models).
Check the handsfree and headset connections.
See if other phones in your area are working (there might be a widespread problem).
Try resetting the phone:
1. Click Reset My Phone
The Status field below should display the status in the following order:
Logging in ...
Running command ...
Waiting for results ...
Logging out ...
2. If the reset is successful, the Status field displays:
The phone has been reset.
Otherwise, it displays an error message.
3. See if the phone works now.
4. If the phone still is not working, report the problem.
Status: Ready

Current Configuration/Pending Changes

When the information for the telephone has been changed, but the changes have not been synchronized with the system, a Show Current configuration/Pending changes drop-down list allows the user to select which configuration is shown.

When there are pending changes, and the users have been assigned the “User can sync changes” options in their User Group properties, the drop-down list appears along with Schedule and Restore buttons. If the user’s access properties allow changes to the General, Keys, or Features pages, the Validate button also appears (Figure 409).

Figure 409
Configuration indication with synchronization allowed



Validate button

The Validate button is available to users who are allowed to make changes to the General, Keys, or Features pages. The Validate button is not available when the user is viewing the current configuration of a telephone. When a telephone has been marked for deletion in the OTM database, the Telephone pages show the deleted configuration. The Validate button is not available when the user is viewing the deleted configuration. The user clicks Validate to validate the changes that have been made to the configuration. The validation process determines whether there are any errors that can cause problems during synchronization with the system. When the user clicks Validate, if there are no errors, the page shown in Figure 410 opens. If there are errors, the Station Validation Results indicate the errors that are present in your telephone configuration (Figure 411).

Figure 410
Station Validation Results with no errors

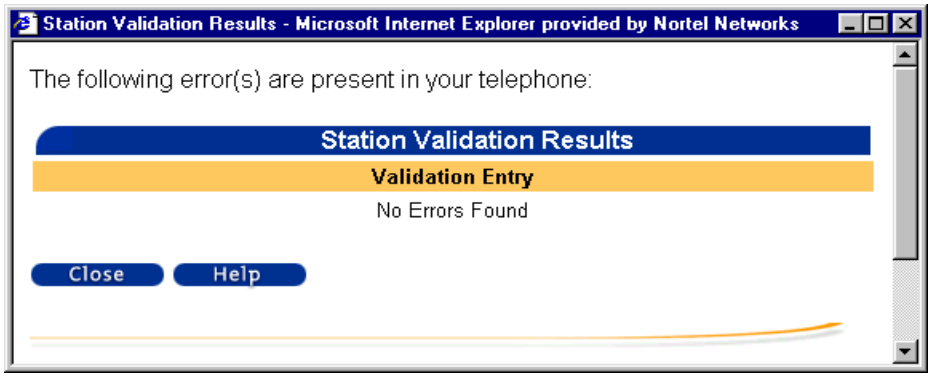
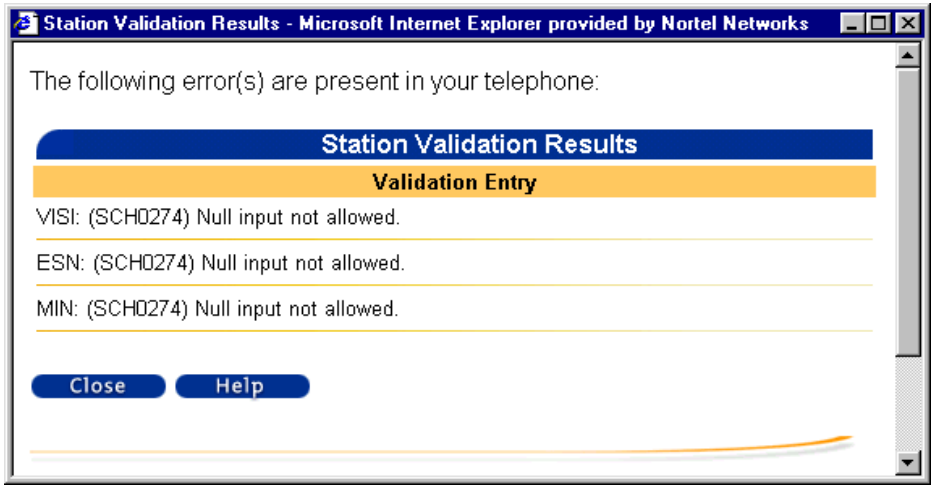

Station Validation Results - Microsoft Internet Explorer provided by Nortel Networks
The following error(s) are present in your telephone:
Station Validation Results
Validation Entry
No Errors Found
Close
Help

Figure 411
Station Validation Results with errors

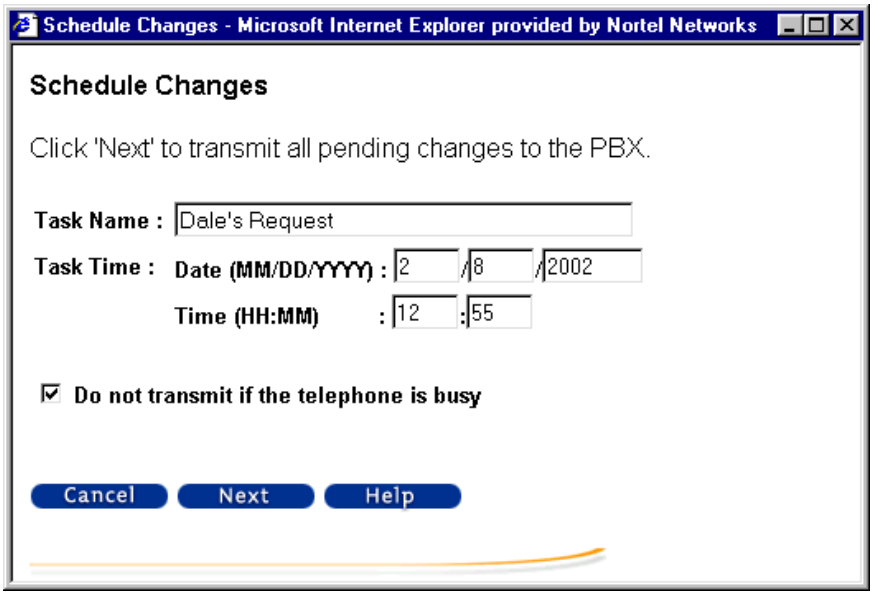

Station Validation Results - Microsoft Internet Explorer provided by Nortel Networks
The following error(s) are present in your telephone:
Station Validation Results
Validation Entry
VISI: (SCH0274) Null input not allowed.
ESN: (SCH0274) Null input not allowed.
MIN: (SCH0274) Null input not allowed.
Close
Help

Schedule button

For telephones with pending changes, the user clicks Schedule to schedule synchronization with the system. When the user clicks Schedule, the Schedule Changes dialog box opens (Figure 412).

Synchronization tasks are handled by the Windows scheduler on the OTM Server. The client requesting the sync does not need to be connected to the OTM Server when the task is run.

Figure 412
Schedule Changes dialog box



Procedure 166
Scheduling a sync task

1 Enter a Task Name in the Task Name text box.

The user can input to a maximum of 128 characters in the Task Name text box.

2 Use the Task Time text boxes to set the start time for the task.

The boxes are pre-filled with a time value equal to the current time.

If the Task Time passes before you click Next, the task is accepted and run immediately after you click Next.

3 Select **Do not transmit if the telephone is busy check** box to have the sync task check the status of the telephone before making changes to the telephone configuration.

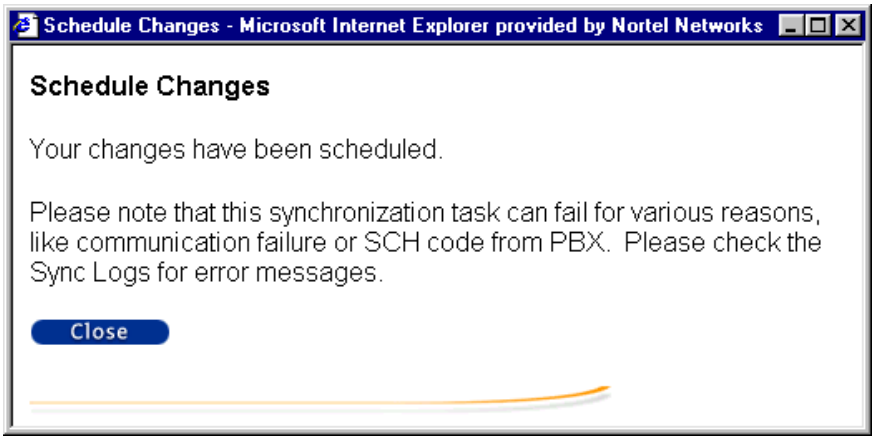
If the box is not selected, and the telephone is busy, the telephone call is dropped. This is a limitation of the PBX.

If the telephone is busy, the changes are not made and the event is logged in the appropriate transmit log. The transmit is not automatically rescheduled. It is up to the user to check the log and reschedule the transmit.

4 Click **Next**.

The Schedule Changes confirmation dialog box opens (Figure 413).

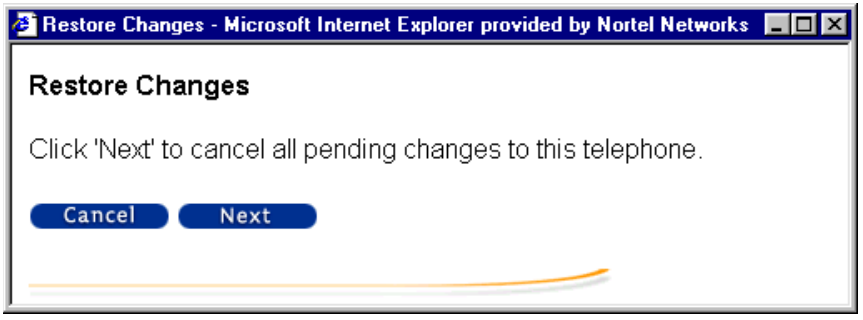
Figure 413
Schedule Changes confirmation


Schedule Changes - Microsoft Internet Explorer provided by Nortel Networks
Schedule Changes
Your changes have been scheduled.
Please note that this synchronization task can fail for various reasons, like communication failure or SCH code from PBX. Please check the Sync Logs for error messages.
Close

Restore button

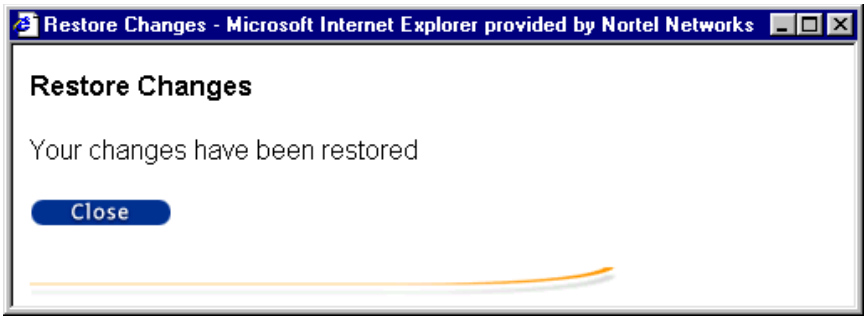
When the user clicks Restore, the Restore changes dialog box opens (Figure 414).

Figure 414
Restore Changes dialog box


Restore Changes - Microsoft Internet Explorer provided by Nortel Networks
Restore Changes
Click 'Next' to cancel all pending changes to this telephone.
Cancel
Next

If Cancel is clicked, the dialog box closes. If Next is clicked, the Restore Changes confirmation dialog box opens (Figure 415).

Figure 415
Restore Changes confirmation


Restore Changes - Microsoft Internet Explorer provided by Nortel Networks
Restore Changes
Your changes have been restored
Close

When there are pending changes the drop down-box along with the Validate and Restore buttons appear (Figure 416). The user is not allowed to schedule synchronization.

Figure 416
Configuration indication with option, "User can sync changes"

When the telephone and the system are synchronized, "Current Configuration" appears at the top of the page, and the drop-down list no longer appears (Figure 417).

Figure 417
Configuration indication when there are no pending changes

Set - Keys Page - Microsoft Internet Explorer provided by Nortel Networks
Telephone
Ext. 7544 Current Configuration
Validate
Troubleshoot Problems
General | Keys | Features | Details
Telephone Key Features
Select a key to view its settings.

End of Procedure

Directory Update

This page is used to perform global changes on the following OTM Directory fields:

- User Group
- Login
- Reporting access group
- Publish status

The User Group field determines the degree of access that the user has to the Desktop Services web pages, as well as to Windows and web-based OTM applications. You may set the User Group field to Administrators, HelpDesk, Default, EndUser, or to any customized user group that you may have configured in OTM. For information on the degree of access provided to the different user groups, see "User groups" on page 854.

The login field is the user's Windows login name. When the user logs in to the Desktop Services web pages, OTM validates the login with Windows. If login is successful, OTM looks up the user's Desktop User Group field in the OTM Directory to determine which telephone features to display.

The reporting access group field determines the user's access to the web reports feature in Telecom Billing Services. You may set this field to All, Peer, Managed, Personal, or

No Access. See “Telecom Billing Services” in *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331) for information on the web reports feature.

The Publish status field determines whether information on an employee or entity in the OTM Directory is synchronized with the LDAP server. Only employees who are published are synchronized with the LDAP server.

Procedure 167
Making a Directory update

1 Click **Directory Update**, which is located under Web Station in the OTM web navigator tree.

The Directory Update page opens (Figure 418). Use this page to select the system and to find the directory entries that you want to change.

If a user group has access to the Directory Update page but does not have access to the Web Station Administration application for any system, the Directory Update page appears (Figure 419). All elements are disabled and a message at the top of the page explains the problem.

Figure 418
Directory Update - find entries

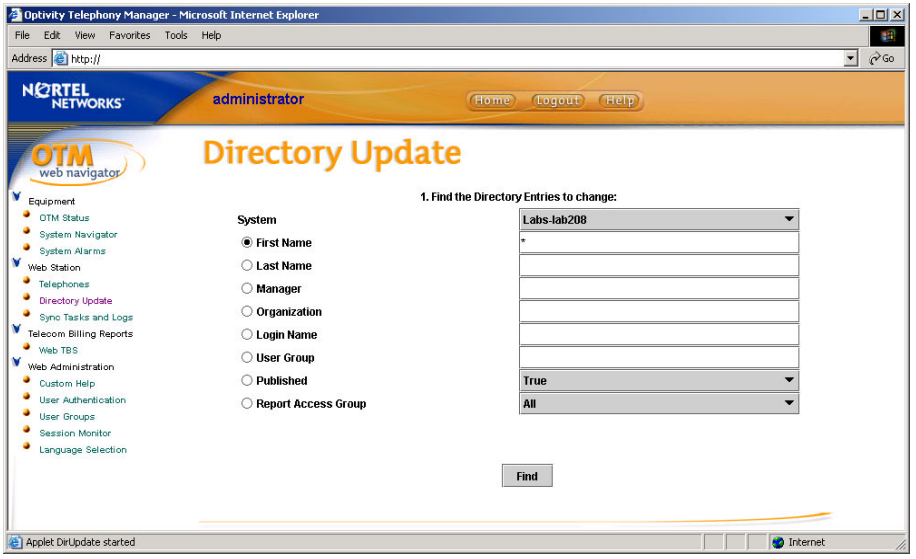
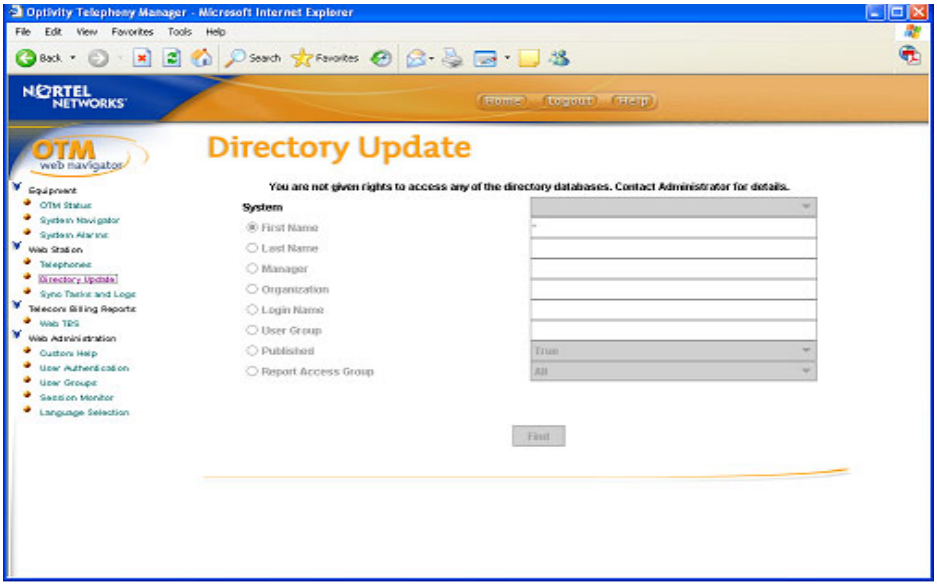


Figure 419
Directory Update with no system access



2 From the drop-down menu, select the system that contains the directory that you want to update.

3 Click the radio button next to the field that you want to use as your search criteria. Only one field may be selected for each search.

4 Based on the search criteria selected in step 2, do one of the following:

- Enter a first name in the First Name edit box.
- You can enter the wildcard character “*” in the fields with edit boxes. For example, both jo* and j*h find directory entries with the first name John.
- Enter a last name in the Last Name edit box.
- Enter a manager’s name in the Manager edit box.
- Enter a user’s login name in the login name edit box.
- Enter a user group in the User Group edit box.
- Select **True** to find all published employees, or select **False** to find all private employees in the Published drop-down menu.

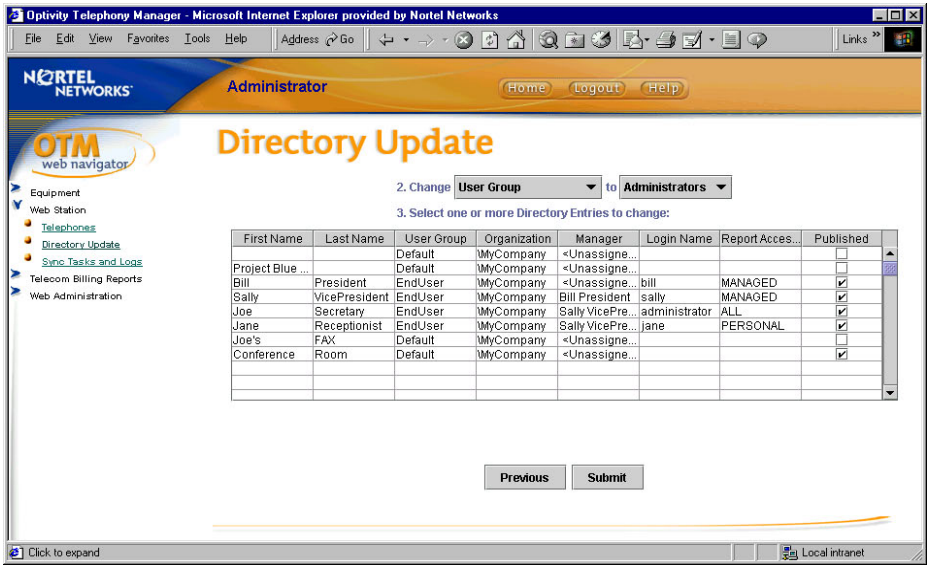
The publish flag is supported for employees only. Directory update does not support the publish flag for an entity’s assets.

Select an access level from the Reporting Access Group drop-down menu.

5 Click **Find**.

The Directory update page opens (Figure 420). Use this page to set the new value and select the directory entries that you want to change.

Figure 420
Directory Update - set value


Optivity Telephony Manager - Microsoft Internet Explorer provided by Nortel Networks
File Edit View Favorites Tools Help
Address Go
Links
NORTEL NETWORKS
Administrator
Home Logout Help
OTM web navigator
Directory Update
Equipment
Web Station
Telephones
Directory Update
Sync Tasks and Logs
Telecom Billing Reports
Web Administration
2. Change User Group to Administrators
3. Select one or more Directory Entries to change:
First Name | Last Name | User Group | Organization | Manager | Login Name | Report Acces... | Published
Default | \MyCompany | <Unassigne...
Project Blue ... | Default | \MyCompany | <Unassigne...
Bill | President | EndUser | \MyCompany | <Unassigne... | bill | MANAGED
Sally | VicePresident | EndUser | \MyCompany | Bill President | sally | MANAGED
Joe | Secretary | EndUser | \MyCompany | Sally VicePre... | administrator | ALL
Jane | Receptionist | EndUser | \MyCompany | Sally VicePre... | jane | PERSONAL
Joe's | FAX | Default | \MyCompany | <Unassigne...
Conference | Room | Default | \MyCompany | <Unassigne...
Previous
Submit
Click to expand
Local intranet

6 From the Change drop-down menu, choose the field that you want to change.

7 Based on the field selected in step 6, do one of the following:

- Select a user group.
- Enter a login name.
- Select a reporting access group, All, Peer, Managed, Personal, or No Access.
- Select a publish status, Published or Not Published.

8 From the table of Directory entries, select the entry or entries to change.

The table only supports shift-click for multiple selections; therefore, you can only select a contiguous block of entries.

Note: With OTM 2.2 and prior releases, be careful not to select blank entries along with the entries to change. If you do select a blank entry, the Directory Update will not occur.

9 Click **Submit** to make the change.

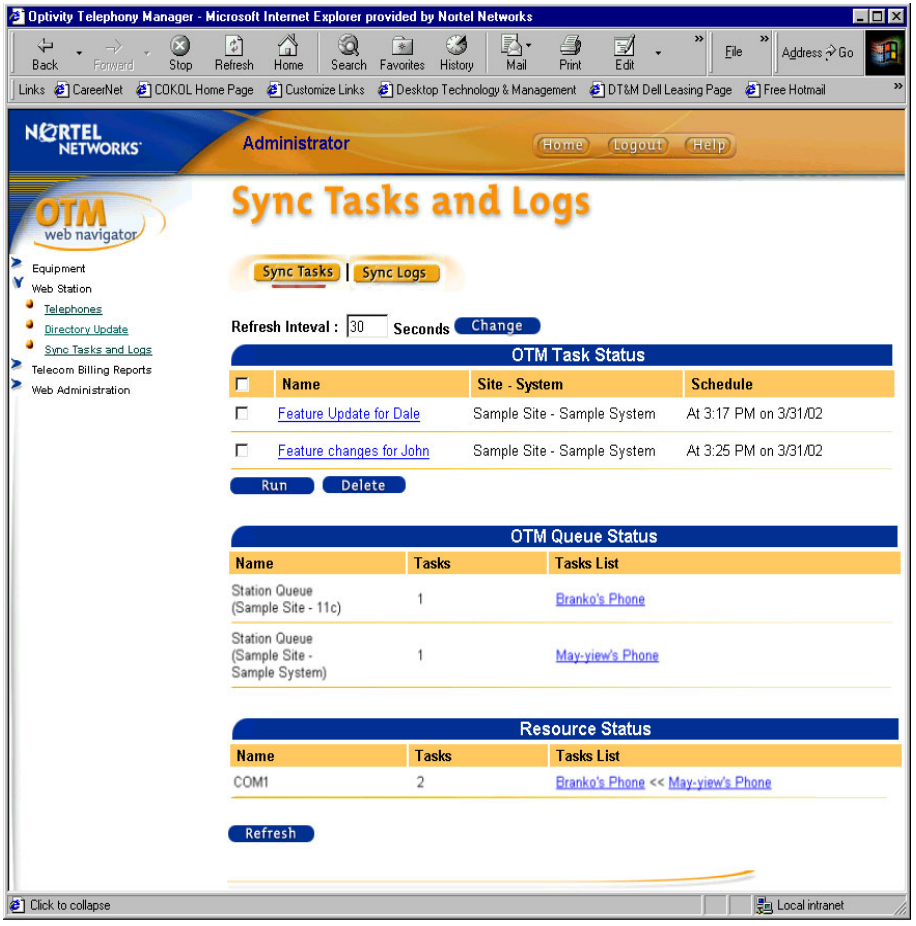
To make the same change for entries in the table that are not contiguous, go back to step 1. The search criteria from the previous change are retained. Click **Next.** Select a second block of contiguous entries, and click **Submit**.

End of Procedure

Sync Tasks and Logs page

Sync tasks are used to synchronize changes made in Web Station with the information that is stored on the system. This synchronization process is not related to the sync tasks in Windows Station Administration. Click the Sync Tasks and Logs link under Web Station to open the Sync Tasks and Logs web page. The page contains two tabs, Sync Tasks and Sync Logs. When the page opens, it defaults to the Sync Logs tab (Figure 421).

Figure 421
Sync Tasks and Logs page—Sync Tasks tab



Sync Tasks

The Sync Tasks page is divided into three sections, OTM Task Status, OTM Queue Status, and Resource Status. Since tasks and queue status are dynamic in nature, this page is set to automatically refresh every 30 seconds.

Click **Refresh** to refresh the page immediately.

Procedure 168
Changing the refresh interval

1 Enter a new interval time in the Refresh Interval text box.

2 Click **Change**. Click **Change** to refresh the page. The new refresh interval is valid for the current user login session.

End of Procedure

OTM Task Status

The upper section of the Sync Tasks page contains the OTM Task Status table. The OTM Task Status table lists the pending sync tasks that have been scheduled using Web Station. From OTM Task Status, you can run a task ahead of its scheduled time, or you can delete pending tasks.

Procedure 169
Running a task ahead of its scheduled time:

1 Select the check box in the left column for the task or tasks that you want to run.

You can choose all of the tasks with a single click by selecting the check box in the column header.gt.

2 Click **Run**.

End of Procedure

Procedure 170
Deleting a task:

1 Select the check box in the left column for the task or tasks that you want to delete.

You can choose all of the tasks with a single click by selecting the check box in the column header.

2 Click **Delete**.

End of Procedure

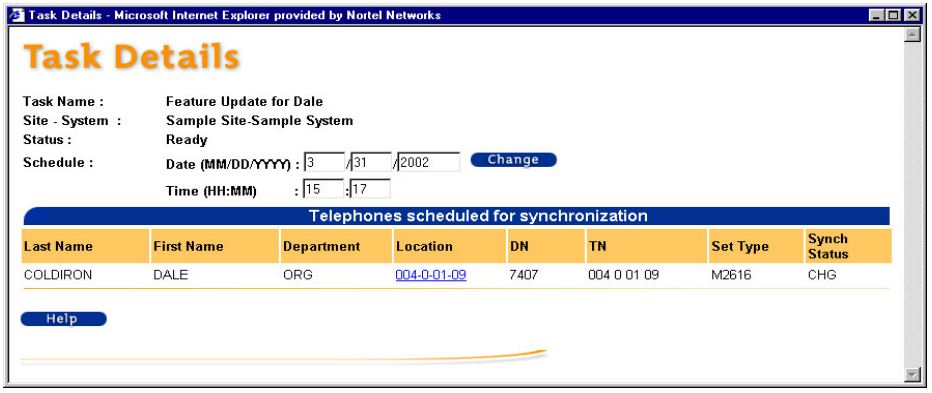
Task Details

The task name in the Name column of the Sync Tasks page is a link to the Task Details page for the task.

Procedure 171
Changing Task details

1 To view the Task Details for a task, click the task name. The Task Details page opens (Figure 422).

Figure 422
Task Details page



The Task Details page varies in appearance depending upon whether the scheduled time has occurred. For the task in Figure 422 on page 838, the time has not yet occurred.

2 The status is listed as Ready, alter the scheduled date and time as desired. The link in the Location column opens the Telephone pages for the telephone associated with the task.

A task that is running or waiting in queue will have its status listed as Running or Waiting in Queue. You cannot change the Schedule time of a task that is running or waiting in queue. Since the telephone is locked by the synchronization application, in this situation, the Location column does not contain a link to the Telephone pages.

End of Procedure

OTM Queue Status

The middle section of the Sync Tasks page contains the OTM Queue Status table. When a task begins running, it moves from the OTM Task Status Table to the OTM Queue Status table. There are two types of queues that may appear in this table: Site-System-Application based queues and Resource-based queues.

Site-System-Application based queues

The purpose of Site-System-Application based queues is to serialize access to a given system. There is one queue per application for each site-system combination. This queue ensures that no two tasks destined for the same system run at the same time resulting in switch overlay conflict.

Resource-based queues

Resource-based queues make sure that two tasks requiring the same resource do not run at the same time. This ensures that the resource is available and the task can be executed successfully. The example in Figure 421 on page 836 shows two tasks that are in queue to use the same com port. The task at the top of the queue is either using the resource or waiting for the resource to become available if it is in use by a non-OTM application. Once the first task has finished, the second task runs.

Resource Status

The lower section of the Sync Tasks page contains the Resource Status table. This table lists the resources that are in use by OTM scheduled tasks. In the example in Figure 421 on page 836, although the two tasks are running on two different systems, they both require the COM1 port. The tasks are executed in the order indicated in the Tasks List column.

Sync Logs

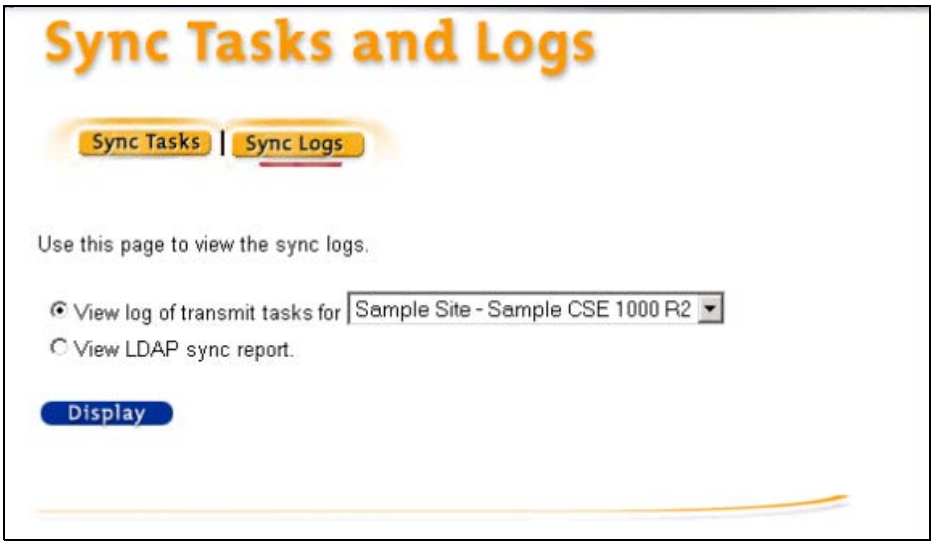
After upgrading to to a new release of OTM, you will not be able to view the transmit log files created by the previous version of OTM Web Station through Web sync log viewer. The web station log file can be accessed from Nortel-root\Common Data\Site Name\System Name\Station Admin\webtrnstn.log using a standard text editorsuch as Microsoft WordPad.

The Sync Logs page is used to access two types of synchronization logs:

- View log of transmit task for..
- View LDAP sync report

Access the Sync Logs page by clicking the Sync Logs tab on the Sync Tasks and Logs page. The Sync Logs page opens (Figure 423).

Figure 423
Sync Tasks and Log page—Sync Logs tab


Sync Tasks and Logs
Sync Tasks
Sync Logs
Use this page to view the sync logs.
View log of transmit tasks for
Sample Site - Sample CSE 1000 R2
View LDAP sync report.
Display

Procedure 172
Viewing a log of transmit

To view a log of transmit tasks scheduled from Windows Station Administration:

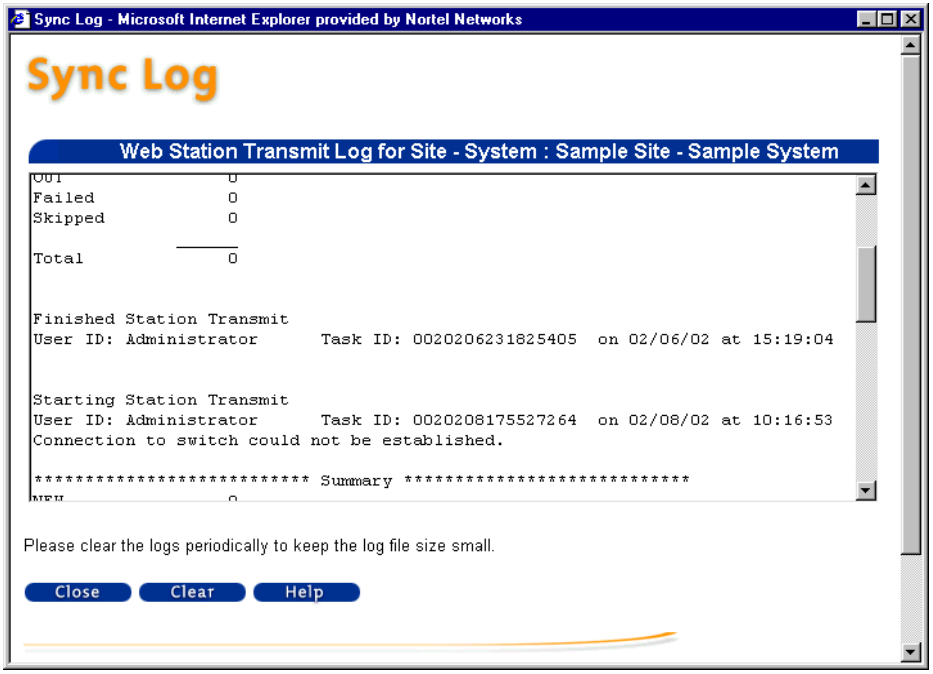
1 Click the radio button located beside “View log of transmit tasks scheduled for.”

2 Select a system from the drop-down list.

3 Click **Display**. A Sync Log page, as shown in the sample (Figure 424), opens.

Only tasks that were scheduled from Windows using Windows Station Administration appear in this log.

Figure 424
Sync Log details


Sync Log - Microsoft Internet Explorer provided by Nortel Networks
Sync Log
Web Station Transmit Log for Site - System : Sample Site - Sample System
001 0
Failed 0
Skipped 0
Total 0
Finished Station Transmit
User ID: Administrator Task ID: 0020206231825405 on 02/06/02 at 15:19:04
Starting Station Transmit
User ID: Administrator Task ID: 0020208175527264 on 02/08/02 at 10:16:53
Connection to switch could not be established.
********** Summary **********
Please clear the logs periodically to keep the log file size small.
Close
Clear
Help

End of Procedure

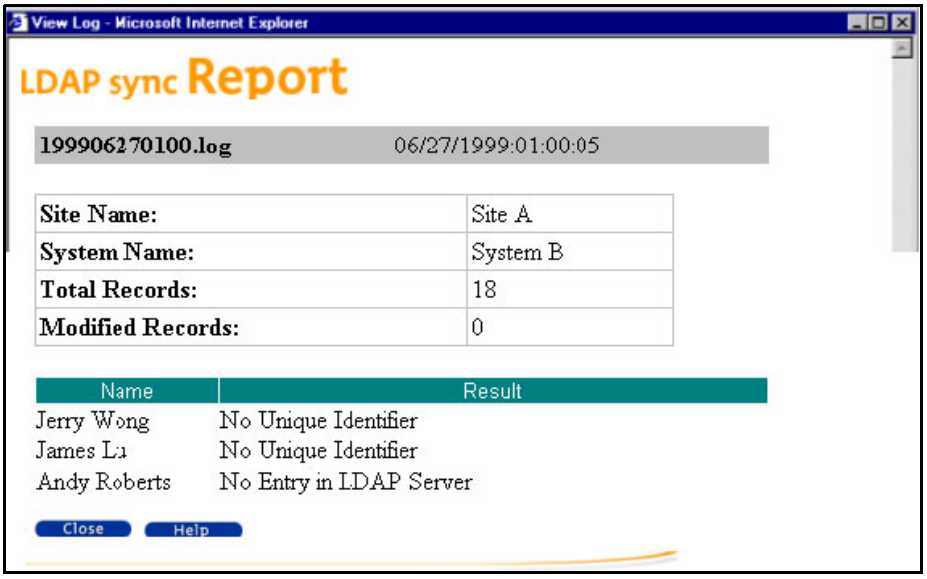
Procedure 173
Viewing a LDAP sync report

1 Click the radio button located beside “View LDAP sync report.”

2 Click **Display.**

The LDAP Sync Report page opens (Figure 425).

Figure 425
LDAP Sync Report page



End of Procedure

Web Administration

The Web Administration heading in the OTM Web navigator tree provides links to Help pages, the User Authentication page, the User Groups page, the Session Monitor page, and the Language Selection page.

Custom Help

The Custom Help page allows you to customize Help text for OTM web-based applications. Typically, you only customize Help that is for end users.

All web-based Help files can be customized. You can either:

- Replace them with customized help provided by you (the administrator)
- Annotate the help files

The custom Help page provides a list of all web-based Help files. You can use a custom Help file instead of the standard Help by copying and then editing and/or annotating the standard Help.

OTM includes sample HTML files that you can use to create customized Help for the end user. Sample Help files are provided for the following Help topics:

- Dialing plans
- System speed call lists
- Flexible feature codes

Each individual Help page has Content and Index buttons to return you to the Help table of contents or index. Next and Previous buttons allow you to navigate to the next Help for topic. A Java applet shows the table of contents and index as navigation frames. Versions of the table of contents and index are also available without frames.

Customizing standard Help files

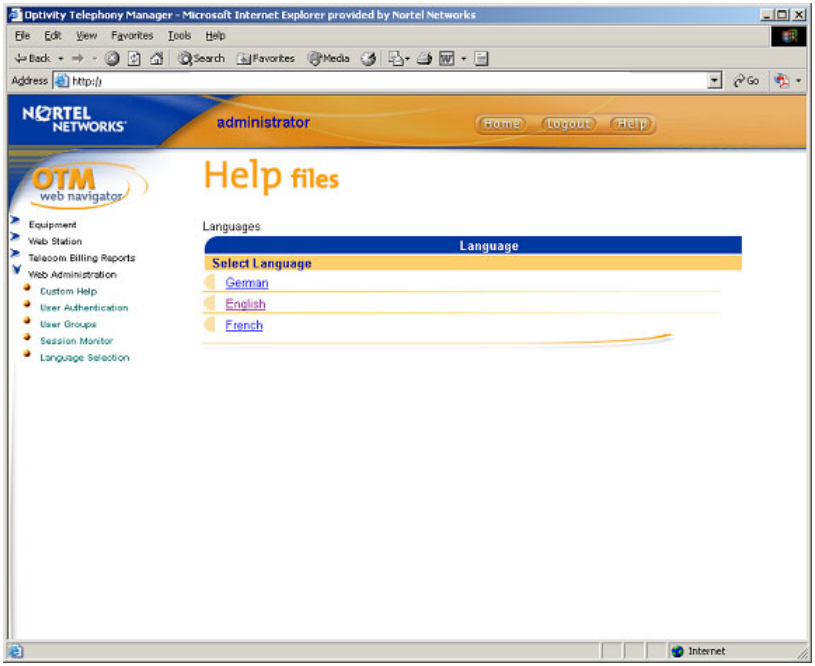
The following procedure shows how to create and annotate a custom Help file. All Help customizing pages appear in the Content frame of the Web Navigator.

Procedure 174
Creating and annotating a custom Help file

1 Click **Custom Help** under Desktop Services in the Web Navigator tree.

The language selection page is displayed. Select the language to view the help files. Note that French and German only contain help for Station Features Group. The Help files Language page opens (Figure 426).

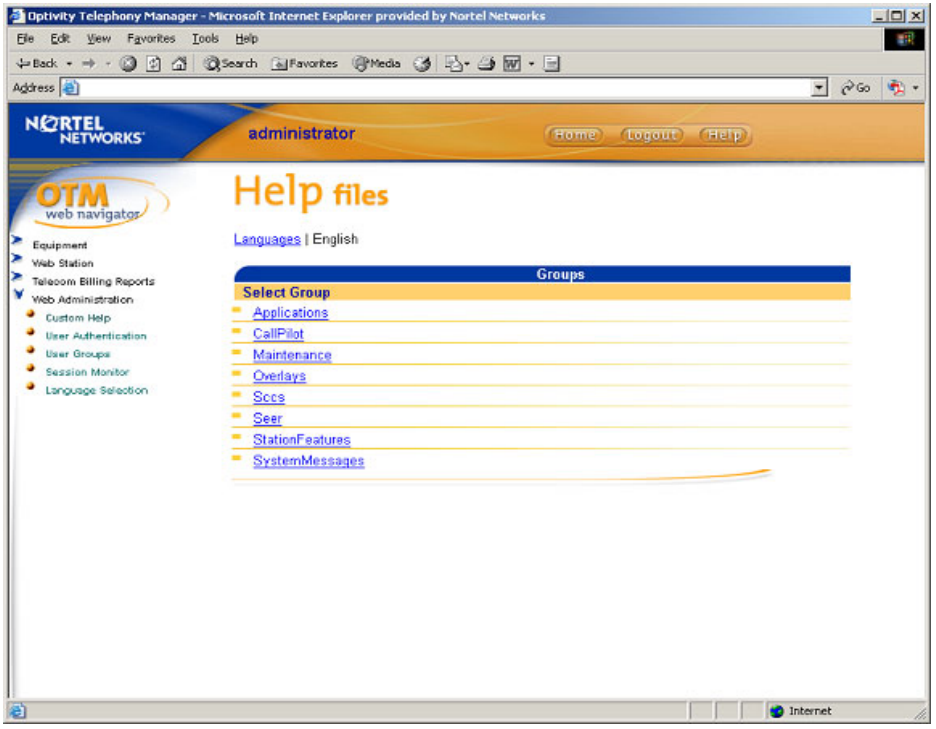
Figure 426
Selecting the standard OTM Help files - Help files languages



2 Click a Language. In this example, click **English**.

The Help group page for the English language opens (Figure 427).

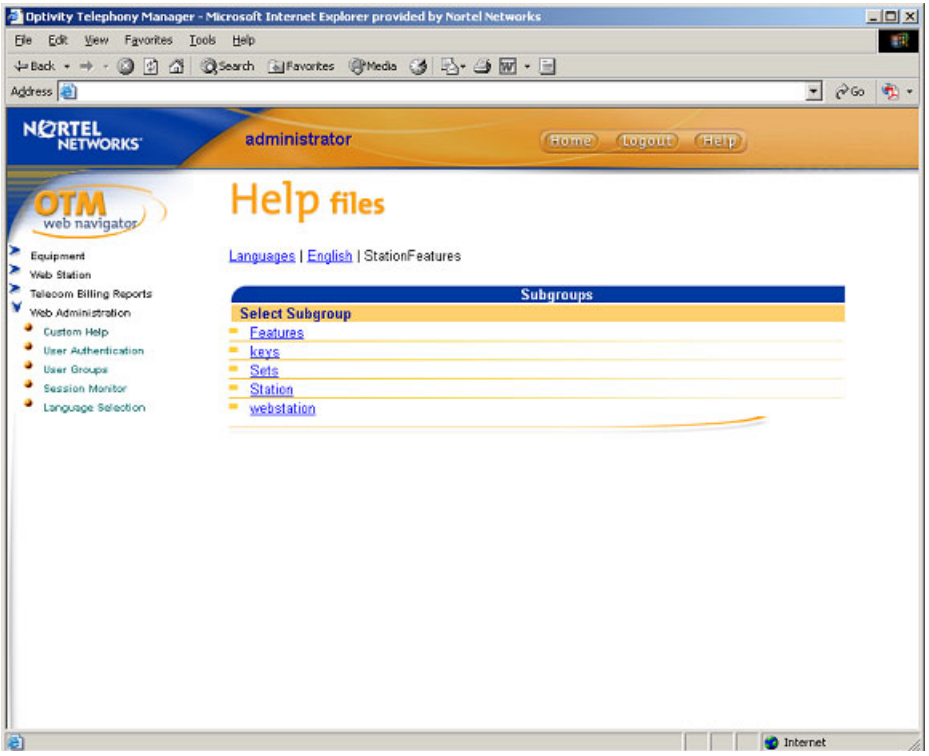
Figure 427
Selecting the standard OTM Help files - Groups



3 Click a Helpgroup. In this example, click **Station Features**.

A page that displays a list of the subgroup Help files for all Station Features opens (Figure 428).

Figure 428
Selecting the standard OTM Help files - Subgroups



4 Click a Subgroup. In this example, click **Keys.** A page that displays a list of the Help files for all Station Features-keys opens (Figure 429).

Figure 429
Selecting the standard OTM Help files - keys

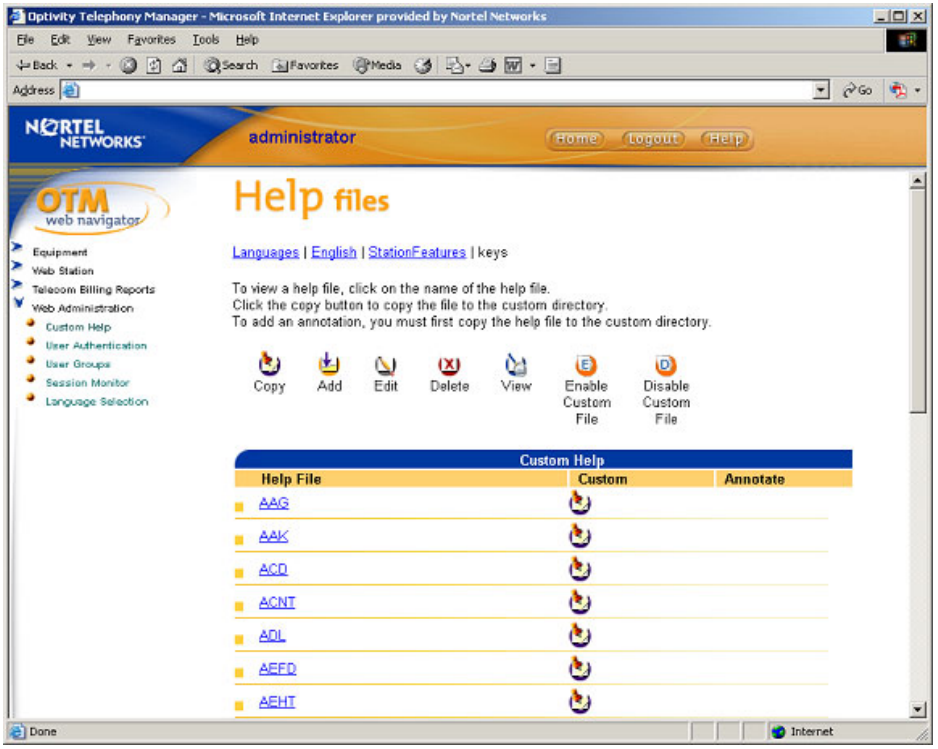


Table 66 explains the function performed by each of the buttons in the Custom Help feature.

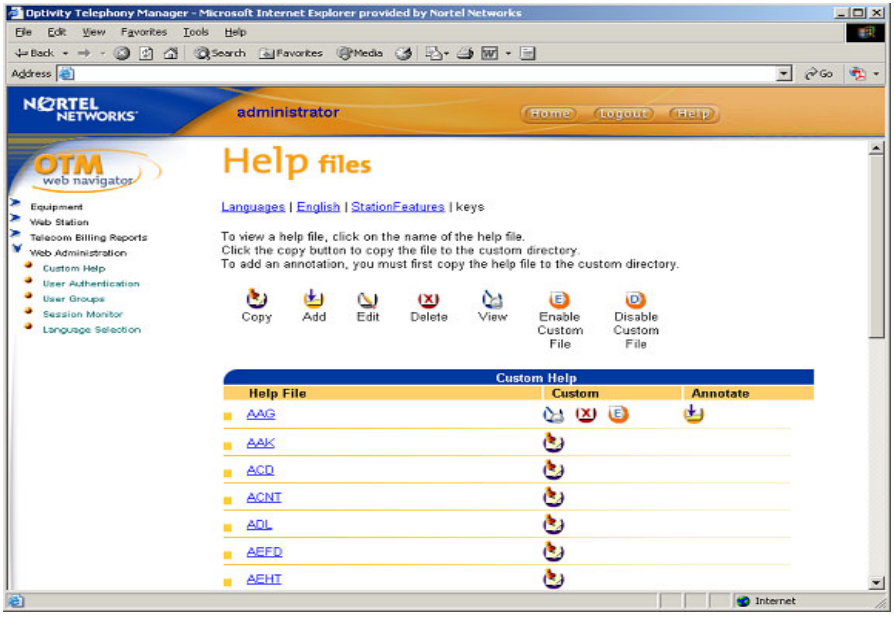
Table 66
Custom Help buttons

Button	Explanation
	Copy the standard Help file to the custom directory.
	Annotate the Help file in the custom directory.
	Edit the annotated Help file.
	Delete the annotation or delete the entire custom Help file.
	View the custom Help file.
	Enable end user viewing of the custom Help file.
	Disable viewing of the custom Help file and use standard Help.

5 Click **Copy** in the Custom column for ACD Answer Agent (AAG).

The buttons in the Custom and Annotate columns change (Figure 430).

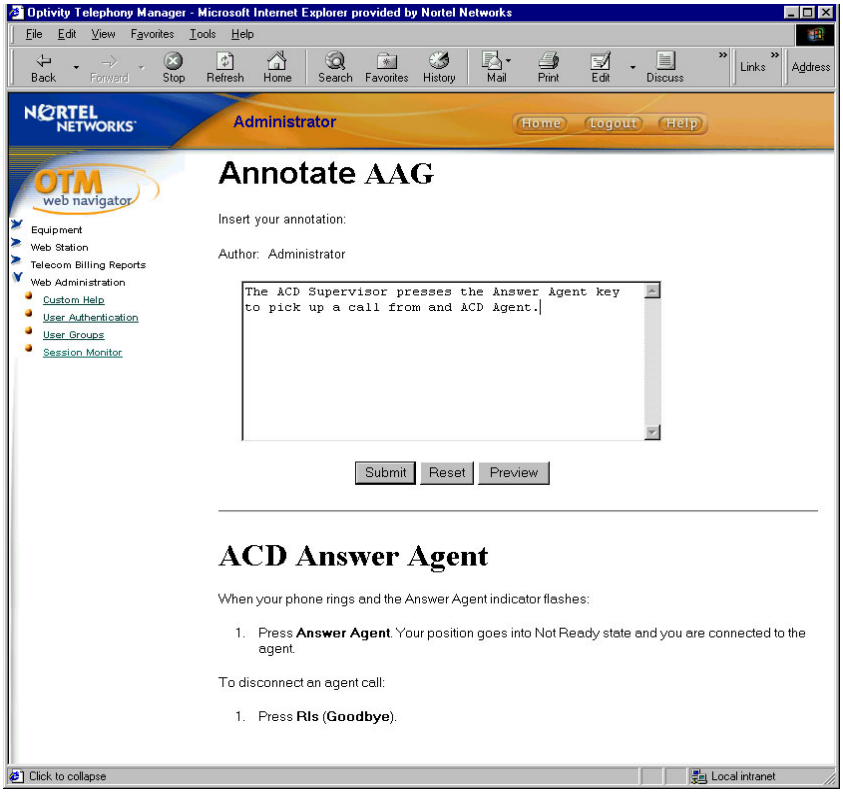
Figure 430
Copy a standard Help file



6 Click **Add** in the Annotation column to add your annotation.

The annotation entry page opens (Figure 431).

Figure 431
Annotating custom Help files


Optivity Telephony Manager - Microsoft Internet Explorer provided by Nortel Networks
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss Links Address
NORTEL NETWORKS
Administrator
Home Logout Help
OTM web navigator
Equipment
Web Station
Telecom Billing Reports
Web Administration
Custom Help
User Authentication
User Groups
Session Monitor
Annotate AAG
Insert your annotation:
Author: Administrator
The ACD Supervisor presses the Answer Agent key to pick up a call from and ACD Agent.
Submit Reset Preview
ACD Answer Agent
When your phone rings and the Answer Agent indicator flashes:
1. Press Answer Agent. Your position goes into Not Ready state and you are connected to the agent.
To disconnect an agent call:
1. Press RIs (Goodbye).
Click to collapse
Local intranet

Only custom Help files can be annotated.

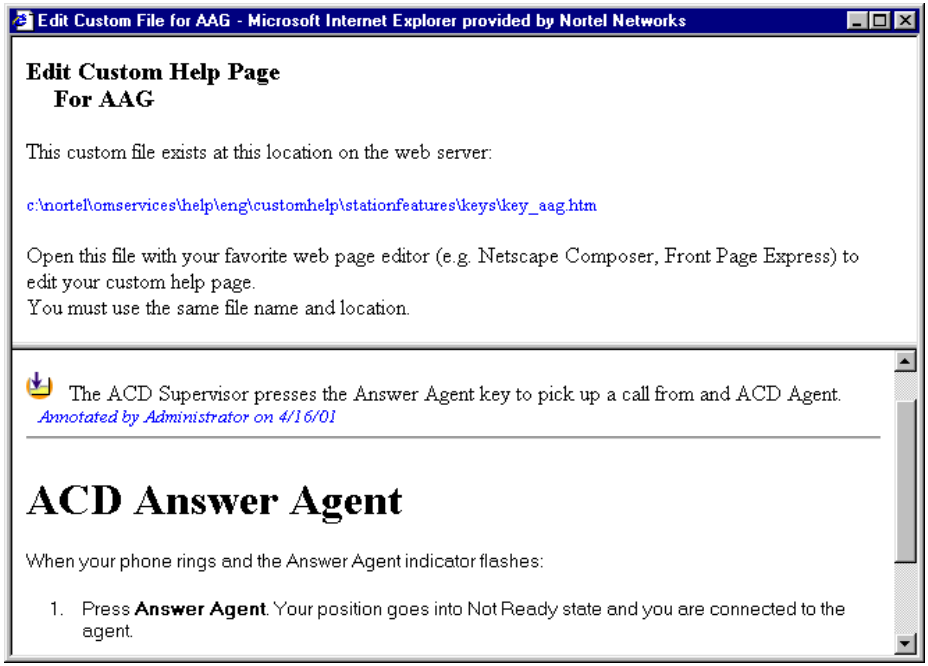
7 Add your annotation and press Submit.

8 Click **Enable** to enable viewing of your annotated file.

9 Click **View** to display your annotated file.

The custom Help file appears (Figure 432).

Figure 432
Viewing an annotated Help file

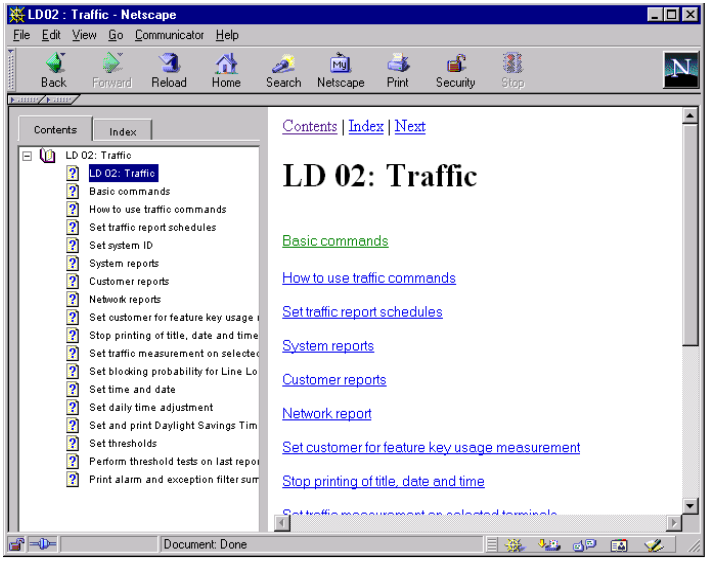

Edit Custom File for AAG - Microsoft Internet Explorer provided by Nortel Networks
Edit Custom Help Page
For AAG
This custom file exists at this location on the web server:
c:\nortel\omservices\help\eng\customhelp\stationfeatures\keys\key_aag.htm
Open this file with your favorite web page editor (e.g. Netscape Composer, Front Page Express) to edit your custom help page.
You must use the same file name and location.
The ACD Supervisor presses the Answer Agent key to pick up a call from and ACD Agent.
Annotated by Administrator on 4/16/01
ACD Answer Agent
When your phone rings and the Answer Agent indicator flashes:
1. Press Answer Agent. Your position goes into Not Ready state and you are connected to the agent.

End of Procedure

Additional Help topics

In addition to Help on features and keys, web-based Help is available for a variety of maintenance and administrative tasks that can be performed using OTM. Figure 433 shows the web-based Help file for overlay 02.

Figure 433
Sample web-based Help screen



User authentication

You can select any of the following three methods or combination of these methods to authenticate OTM users:

- Local OTM Server account
- Windows Domain account
- LDAP authentication

The Administrator account is always authenticated through the local server account because it is a default account on all supported Windows platforms.

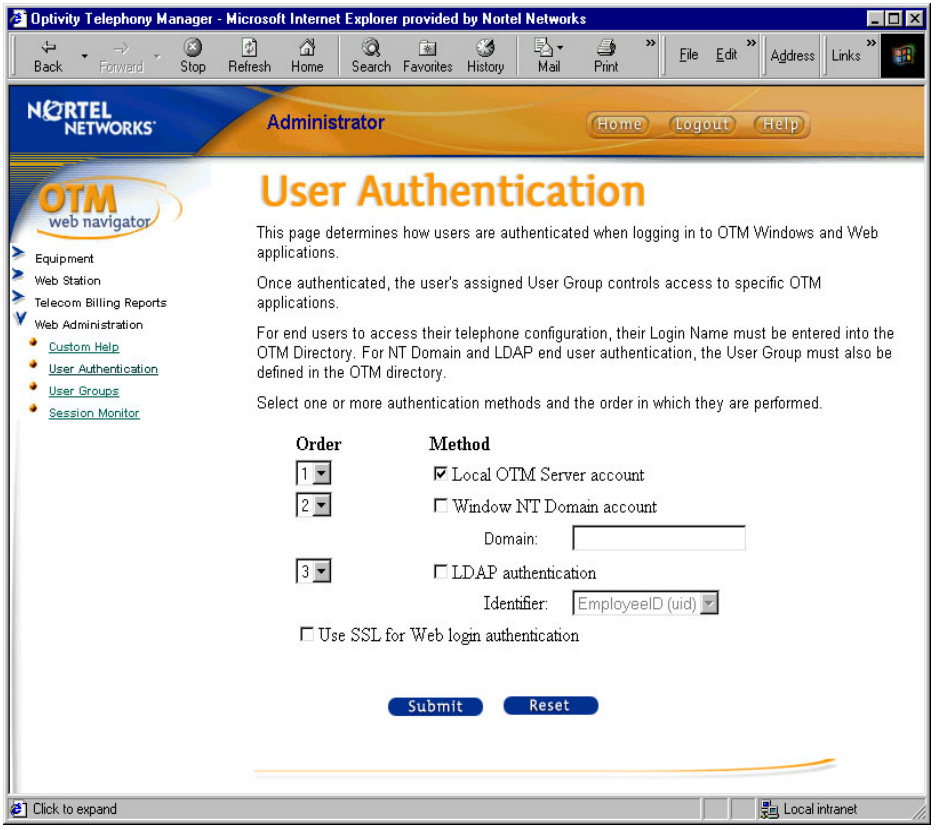
The default authentication method is the Local OTM Server account and this method is always selected. This method provides the best login performance because there is no requirement to search the OTM directory for the user's assigned User Group..

Procedure 175
Configuring authentication

1 From the OTM Web Navigator tree, select **User Authentication**.

The User Authentication page opens (Figure 434).

Figure 434
OTM User Authentication page



2 Use the check boxes to select one or more of the available authentication methods:

a. If you select Windows NT Domain account, enter one or more domains in the Domain text box.

Note: You must separate the domain names with a comma. Do not use any spaces.

b. If you select LDAP authentication, use the drop-down list to choose either EmployeeID (uid), or EMail (email).

3 Use the drop-down lists to assign the order in which the authentication methods are performed.

If you choose multiple authentication methods, OTM respects the order configured; however, it should be noted that the best performance is achieved by using the Local OTM Server account method.

4 To use the secure socket layer (SSL) during the authentication process, select **Use SSL for Web login authentication** check box.

5 If the OTM Server has the required certificate installed, selecting the check box causes OTM to use SSL encrypted transport during authentication. In this case, web login is performed using https:// rather than http://, and the traffic is encrypted. The OTM Server automatically switches to non-SSL transport once the user is successfully authenticated.

The selected method(s) are used to authenticate users on all OTM platforms: OTM Server, OTM Client, and OTM Web Client.

End of Procedure

For information on configuring users for desktop access, see "Enable web desktop access" on page 169.

Authentication methods can also be configured using the Windows navigator. See "User authentication" in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

User groups

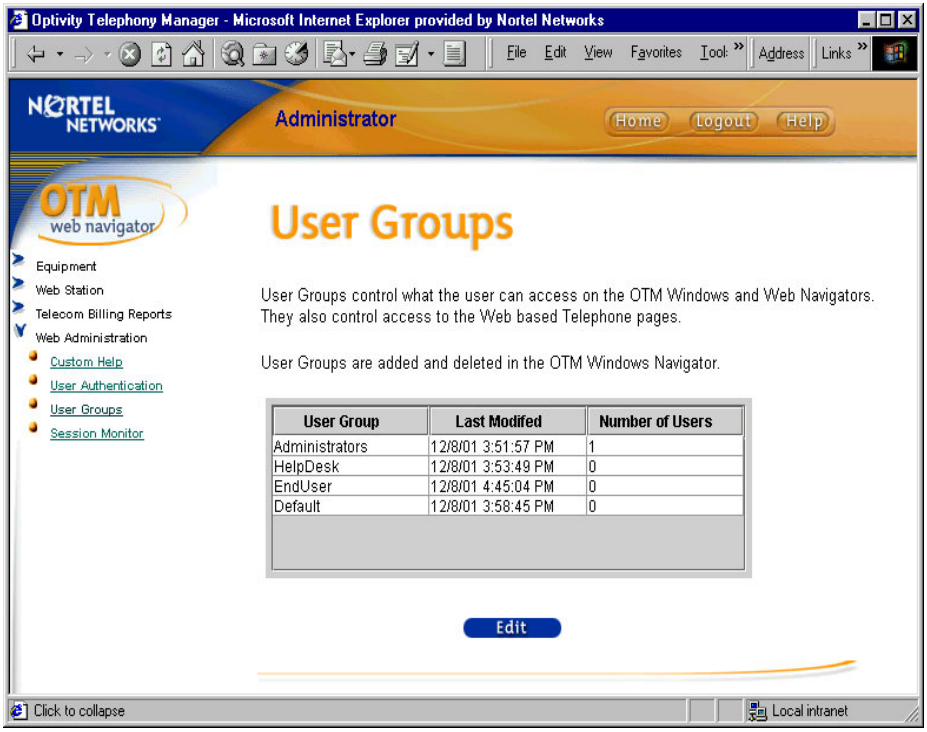
Navigator access is controlled by user group. A user's User Group assignment determines which features are available on the Telephone features page. You also use the User Groups page to indicate which users are permitted to make changes to the General and Keys pages.

The migration from User Templates to User Groups has required that several changes be made to existing users profiles and access privileges. For more information, see "Migrating User Templates from OTM 1.2 to User Groups" on page 93.

User groups must be added and deleted in the OTM Windows Navigator. See "Creating a user group" in *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

To view the available user groups, click the User Groups link located under Web Administration in the OTM Web Navigator tree. The User Groups page opens (Figure 435)

Figure 435
User Groups page


Optivity Telephony Manager - Microsoft Internet Explorer provided by Nortel Networks
File Edit View Favorites Tool: Address Links
NORTEL NETWORKS
Administrator
Home Logout Help
OTM web navigator
Equipment
Web Station
Telecom Billing Reports
Web Administration
Custom Help
User Authentication
User Groups
Session Monitor
User Groups
User Groups control what the user can access on the OTM Windows and Web Navigators. They also control access to the Web based Telephone pages.
User Groups are added and deleted in the OTM Windows Navigator.
User Group
Last Modifed
Number of Users
Administrators 12/8/01 3:51:57 PM 1
HelpDesk 12/8/01 3:53:49 PM 0
EndUser 12/8/01 4:45:04 PM 0
Default 12/8/01 3:58:45 PM 0
Edit
Click to collapse
Local intranet

Navigator access

Access to the sites, systems, and applications available in the both the Windows and Web Navigators is controlled on a user group basis through the User Group Properties Java application.

Procedure 176
Modifying access rights of a user grop

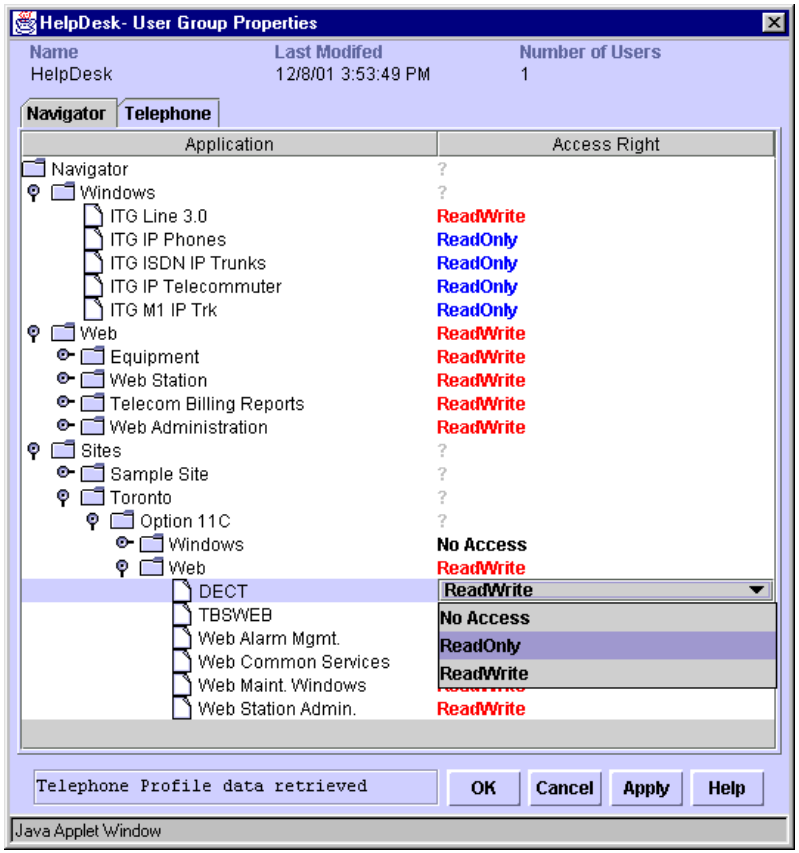
1 Click to select a User Group.

2 Click **Edit.**

The User Group Properties Java application launches and the User Group Properties dialog box for the selected user group opens (Figure 436).

Alternatively, you may double-click the user group to display the User Group Properties dialog box for the selected user group.

Figure 436
User Group Properties dialog box—Navigator tab



End of Procedure

The Access Right column lists the level of access allowed for each site, system, and application. This is the same tree structure and performs the same function as the Windows-based User Groups dialog box.

The question mark indicates that the subitems belonging to the item displaying the question mark have mixed access settings.

Procedure 177
Modifying access rights

1 Use the drop-down list to choose ReadWrite, ReadOnly, or No Access for each item in the tree.

2 Click **Apply**.

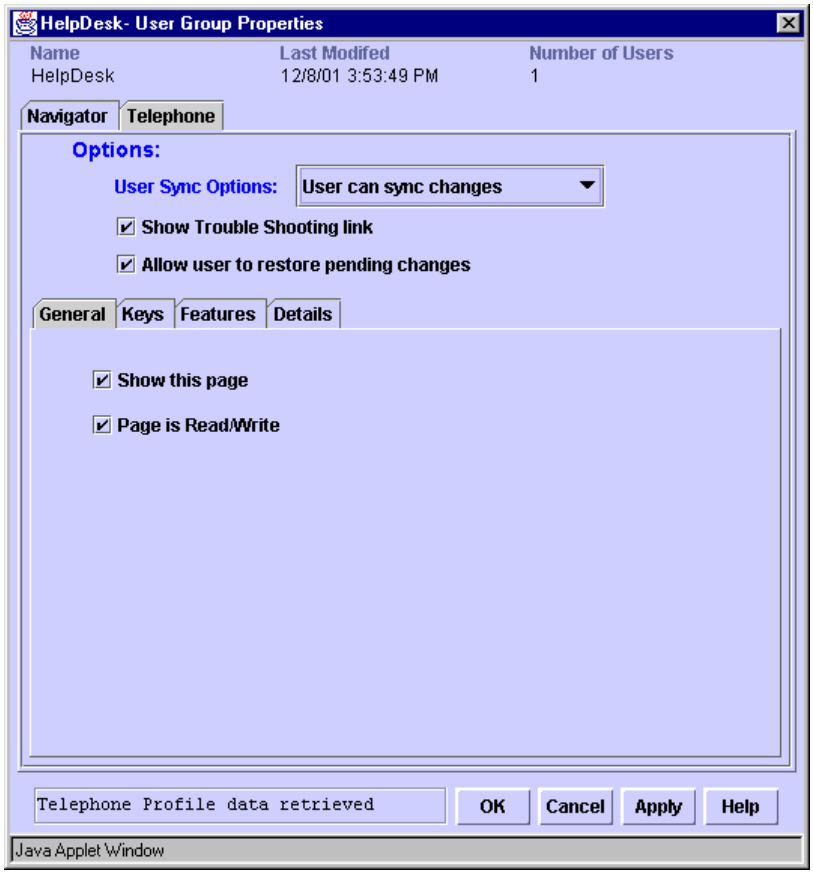
End of Procedure

Telephone access

The Telephone tab in the User Group Properties dialog box is used to control access to the telephone pages on the web for each user group (Figure 437).

For information on the telephone pages, or to view examples of telephone pages, see "Telephones" on page 797.

Figure 437
Telephone access properties dialog box—General Tab



The options that are configured in the upper section of this dialog box are applicable to all of the tabs in telephone pages. These options included:

- Allowing or denying this group the ability to synchronize changes with the Meridian 1 or CS 1000. If synchronization is denied, you must manually synchronize the changes with the system using Windows-based Station Administration or Web Station.
- Determining whether the troubleshooting link appears at the top of the telephone page for members of this group.
- Allowing or denying this group the ability to restore changes that have been made to a telephone.

Procedure 178
Configuring telephone access options

1 Use the drop-down list to select either “User can sync changes” or “User cannot sync changes”.

2 Select the **Show Trouble Shooting** link check box to enable this option.

For EndUsers, clicking the link displays the Telephone Troubleshooting Help page, which includes a reset button.

For Web Navigator users, clicking the link displays the maintenance page for the telephone with all of the available commands. See “PE Units maintenance” on page 791.

3 Select the **Allow users to restore pending changes** check box to permit the users in this group to restore the changes made to a telephone.

If you allow users to restore pending changes, they will be able to undo any changes that have been scheduled by the Administrator or HelpDesk but have not yet occurred. For more information on restoring pending changes, see “Restore button” on page 829.

4 Click **Apply** to apply your changes.

End of Procedure

General tab

In the General tab, you use check boxes to determine whether the Telephone—General page appears for this user group, and whether the users in this group can make changes to this Telephone page. The Telephone—General page contains information such as site, system, location, and TN, which may not be appropriate for or valuable to end users.

Procedure 179
Configuring the Telephone—General page

1 Select **Show this page** check box to allow this user group to be able to view the Telephone—General page (Figure 437 on page 858).

2 Click **Page is read/write** to allow users in this group to make changes to the information that appears in this telephone page.

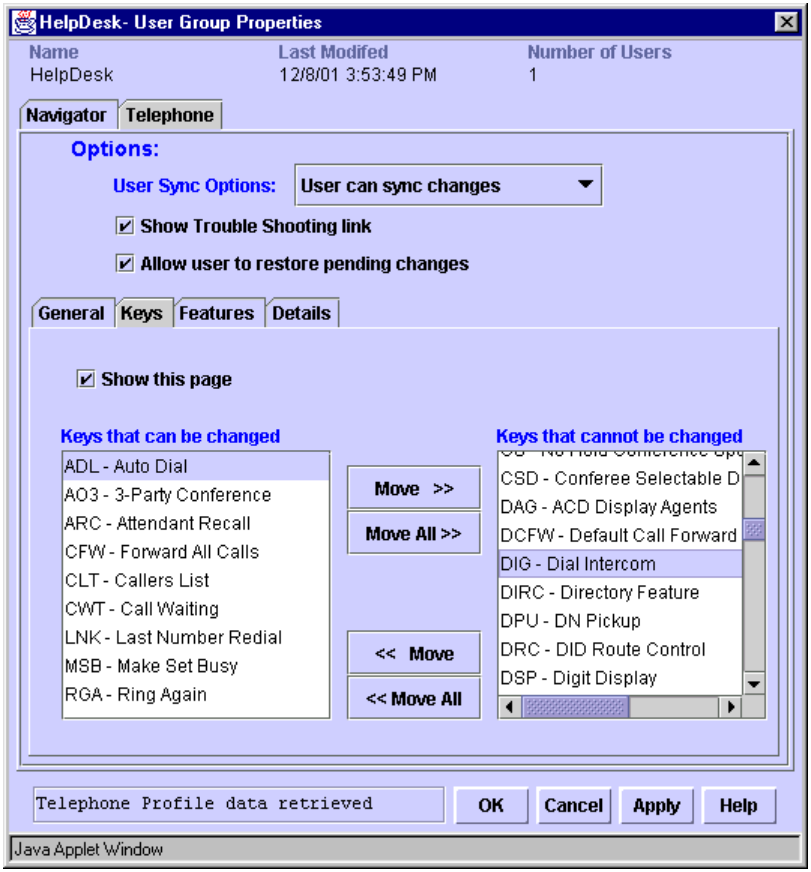
3 Click **Apply** to apply your changes.

End of Procedure

Keys tab

In the Keys tab (Figure 438), you use the check box and lists of key-based features to determine whether the Telephone—Keys page appears and, if so, which keys the users in this group are able to change.

Figure 438
Telephone access properties dialog box—Keys tab



Procedure 180
Configuring the Telephone—Keys page

1 Select **Show this page** check box to allow this user group to be able to view the Telephone—Keys page.

2 Use the “Move” and “Move All” buttons to move the key-based features that can be changed by this user group into the left column.

Put keys into the left column to allow users in this group to interchange these key types and change the key parameters.

If the user selects a key that is not in the left hand column while viewing the Telephone—Keys page, the Change button does not appear.

3 Click **Apply** to apply your changes.

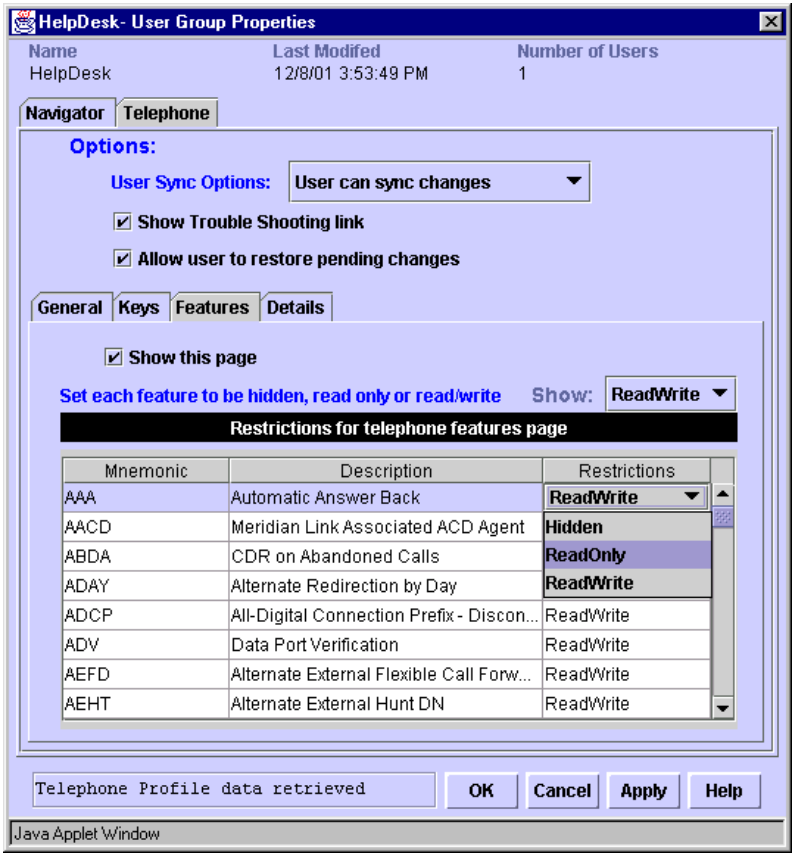
End of Procedure

Features tab

In the Features tab (Figure 439), you use the check box and list of features to determine whether the Telephone—Features page appears and, if so, which features the users in this group can view and change. The list of features contains all the non-key features listed alphabetically by prompt in LD10 and LD11. Each feature is assigned a restriction of Hidden, ReadOnly, or ReadWrite. If Hidden, the feature does not appear in the end user Feature drop-down list.

Read/Write capability requires the OTM Premium package.

Figure 439
Telephone access properties dialog box—Features tab



Procedure 181
Configuring the Telephone—Features page

1 Select **Show this page** check box to allow this user group to be able to view the Telephone—Features page.

2 Use the drop-down lists in the Restrictions column to configure each feature as ReadWrite, ReadOnly, or Hidden.

The “Show” drop-down list contains: All, Hidden, ReadOnly, and ReadWrite. This is used to limit the size of the list.

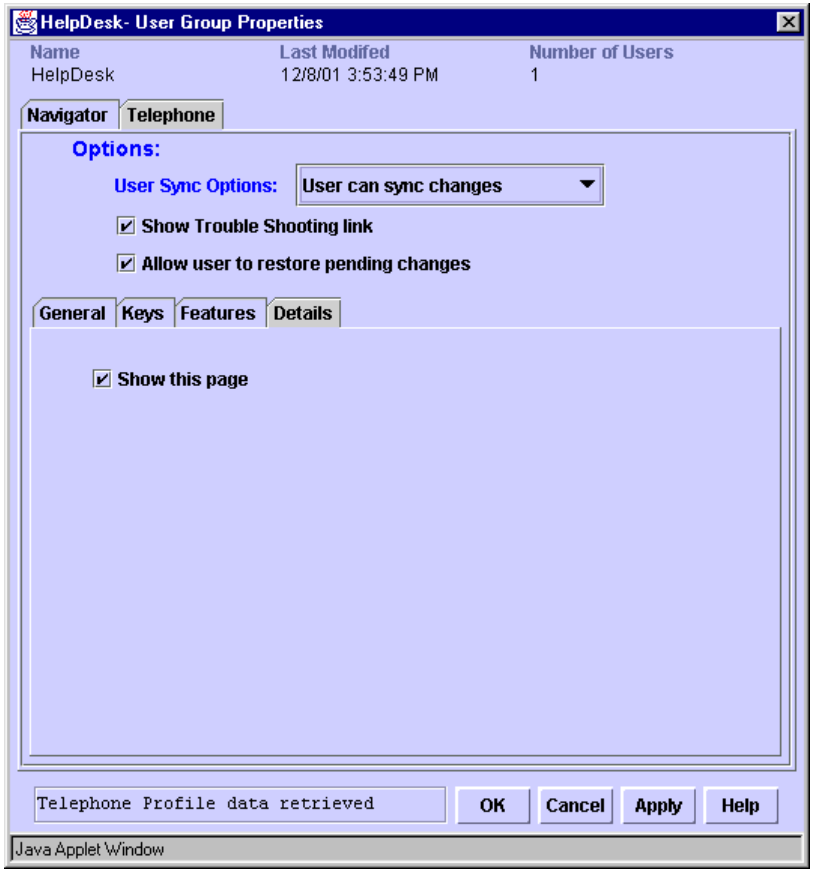
3 Click **Apply** to apply your changes.

End of Procedure

Details tab

In the Details tab (Figure 440), you use the check box to determine whether the Telephone—Details page appears.

Figure 440
Telephone access properties dialog box—Details tab

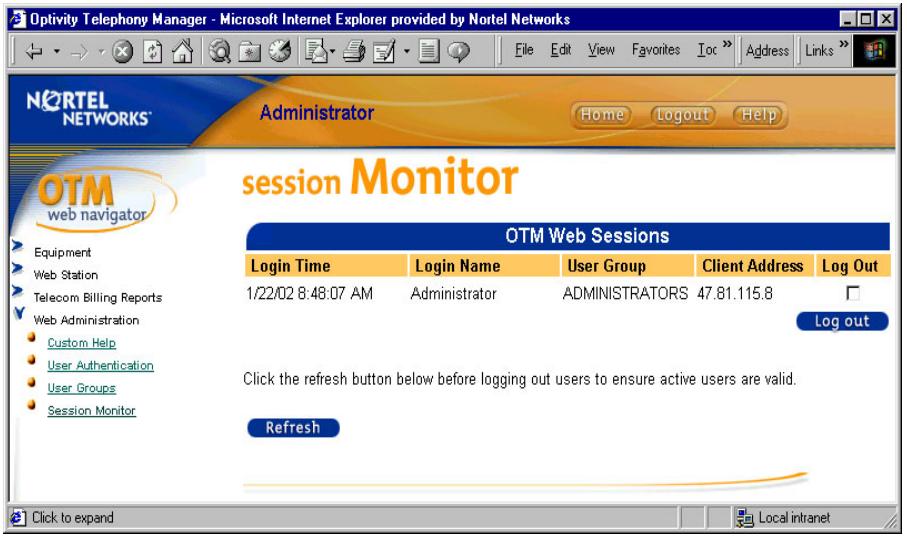


Session Monitor

Login security prevents the web pages from being accessed without first successfully providing a valid login name and password combination. The Session Monitor page (Figure 441) contains a list of logged in users with the login time and IP address.

The administrator may log out users by selecting the corresponding Log Out check boxes and then clicking Log out.

Figure 441
OTM Administrator Session Monitor screen



Language Selection

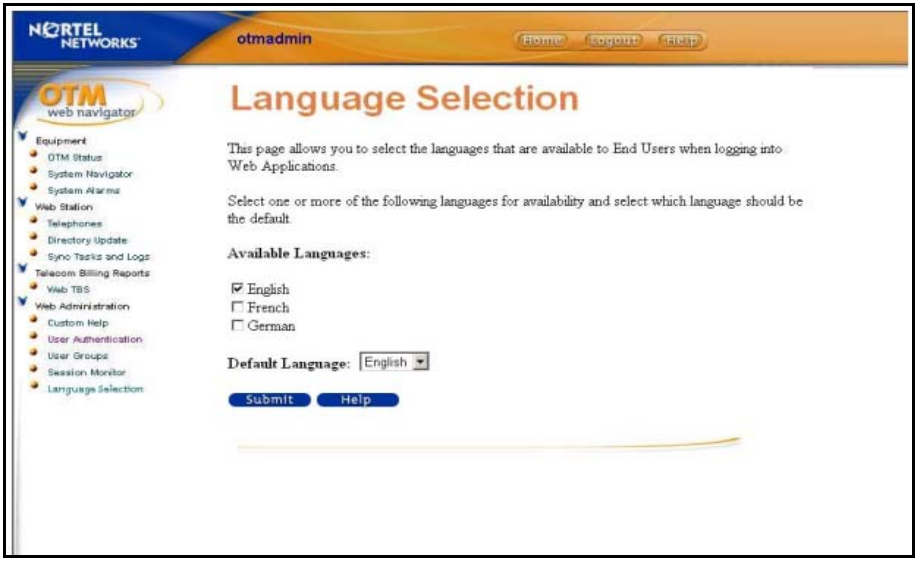
Available Languages

Procedure 182
Selecting available Languages

When OTM is first installed the default settings for Language Selection is English-only.

1 Select one or more of the Available languages to be available to End Users (Figure 442).

Figure 442
Language Selection



When OTM is first installed English is the default language.

2 Select one of these languages from the drop down list to be the default language.

3 Click **Submit** to apply these changes.

End of Procedure

If at least one language is not selected, or if the selected Default Language does not match one of the selected languages then the “Language Selection error message” window is displayed.

The changes made on this page are only applicable to End Users that go to the login page after the changes have been applied. Users that are already logged in, or that are currently viewing the End User login page will not be affected by any changes made on the Language Selection page.

Users logging in to OTM Web

For users that log in from the Administrators login page

All logins take place in English, and all Web Applications are displayed in English.

For users that login from the End Users login page

A choice of language is displayed at login time. The login screen contains an extra link for each available language.

From the default login page, the End User has the option to select a different language from those that were made available by the Administrator.

Once the user has logged into OTM from a particular login page, the language cannot be changed again for that session. The language can be changed if the user logs out and selects a new language before logging in again.

It is possible for an End User to bookmark a login page in their preferred language. For example, if the default page is English but French is also available, the user can link to the French login page and bookmark this page. Clicking the bookmark will always bring the user to the French login page. If the Administrator later removes the language that an End User has bookmarked from the available languages, the user will be forwarded to the Default Login Page instead. This also prevents End Users from modifying the HTML query string to access a language that the Administrator has not allowed them to access.

Web Desktop Services

OTM Web Desktop Services enables users to view and modify the configuration of their telephones via a web browser.

The web display includes a graphical view of the telephone, and shows the configured features. Help text is available for the features configured on the telephone. See "User groups" on page 854 for information on your ability to restrict the display of certain features to specific user groups. For example, most Class of Service "features" are irrelevant for end users; therefore, you should specify that they not appear.

Installation and configuration of Desktop Services

The following procedure outlines the steps to install and configure Desktop Services:

Procedure 183
Installing and configuring Desktop Services

1. Install OTM. See *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).
2. Create Windows accounts for EndUser and HelpDesk users as required.
3. Log on to the Web Navigator as Administrator and go to the User Authentication page.

   To navigate to the Administrator Login page, place **`/admin`** after the OTM IP address or host name in your web browser.
4. Configure authentication method(s) using the User Authentication page. See "User authentication" on page 852.
5. Go to the User Groups page and configure the Navigator and Telephone access properties for the HelpDesk, EndUser, and Default user groups. See "User groups" on page 854

   By default, HelpDesk users are given read/write access to all features, and access to all items in the Web Navigator tree except those in the Web Administration branch. HelpDesk users have no access to OTM Windows applications. EndUser users have read-only access to 21 features, and no access to the Windows or Web Navigators. Default users have no access..

   To allow HelpDesk users to make changes to other user's telephone configuration data, make sure that they have access to Web Station.

6 For EndUser users, using the Employee Editor in the OTM Windows interface, enter the users' login name, User Group, and Web Reporting Access Rights in the users' OTM Directory entry. See "Enable web desktop access" on page 169.

The "Desktop User Guide" provides reference information for Web Desktop Services end users. You may want to distribute copies of this manual to the end users once you have installed and configured Desktop Services.

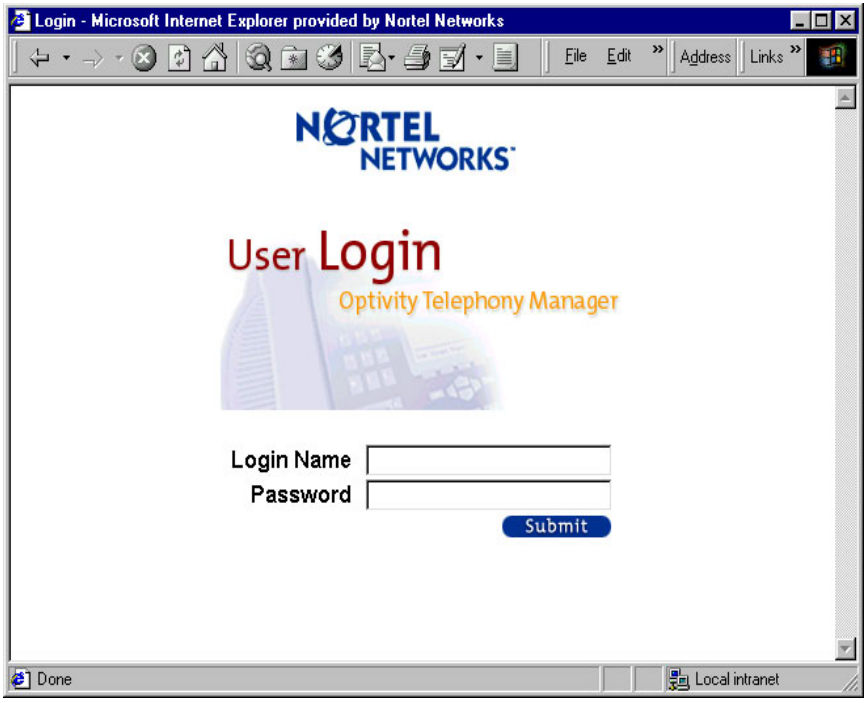
End of Procedure

User Login page

Login security ensures protection against unauthorized entry and enforces access permissions for logged on users.

When a user points a web browser to the OTM end user URL (http://otm/web server) a login page appears (Figure 443). If login is successful, the user's personal Desktop Service main page appears.

Figure 443
User Login page



EndUser main page layout

The Web Desktop Services end user main page includes the following common elements:

- **Information Banner** (top): Contains the Nortel logo, plus a Help, Logout, and Home button. The Help button takes you to general help on how to use these web pages. The Home button takes you to the My Profile page. The logout button takes you to the login page.
- **Navigation Bar** (left side): Lists hypertext links to various Desktop Service pages. When you single-click on an item in the Navigation bar, the related page appears in the Content Frame of the standard web page.

  In the rare situations where a user has telephones on different switches managed by the OTM Server, the Navigation Tree expands to include the systems as the main nodes. The user selects the My Profile or Telephone(s) in the desired system.

- **Content Frame**: Contains the page based on the selection in the Navigation bar. There are four types of pages:

  Home page - General information about the user (name, department, and so on). The information displayed is determined by the administrator.

  Telephone pages - Contains telephone configuration data. A user may have more than one telephone; however, configuration data can appear for only one telephone at a time. The information displayed is determined by the administrator.

  Billing Reports - The TBS Web Reporting application displays billing reports in the content frame. For information on TBS Web Reporting, see *Optivity Telephony Manager: Telemanagement Applications* (553-3001-331).

  Other Links - Contains links provided by the Administrator.

A line is placed at the bottom of each content page to visually indicate the end of the page. If vertical or horizontal scrolling is required, the entire page is scrolled.

My Profile page

Once a user who is a member of the EndUser user group logs in to the User Login page, the My Profile page opens. This page contains general information about the user. The system retrieves this information from the OTM Directory.

Click **Home** in the Banner or My Profile in the Navigation bar to go to this page.

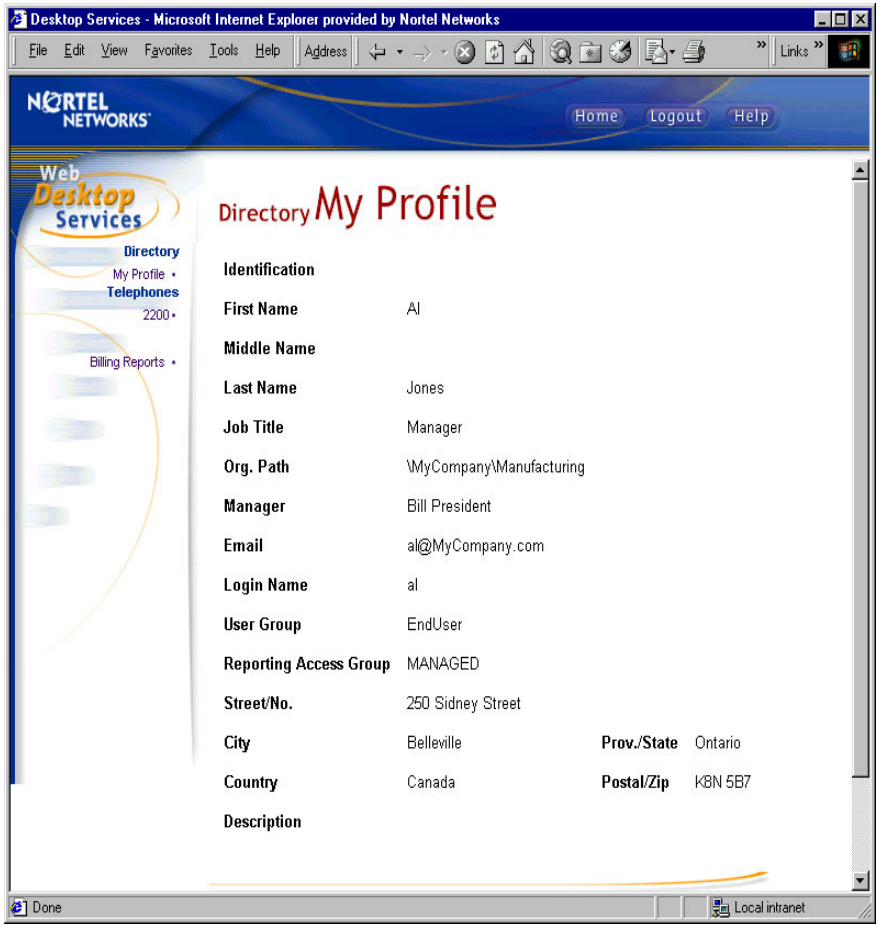
The information that appears is fixed and cannot be changed. If there is no information for a field, it is left blank. Hidden fields do not appear. Only fields that are listed as read-only are visible.

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Org Path (this is extracted from the Organization Path in the OTM directory)
- Manager
- E-mail address
- Login name
- User Group
- Web Reporting Role

- Address fields
- Description

Figure 444 shows an example of a My Profile Page.

Figure 444
My Profile page

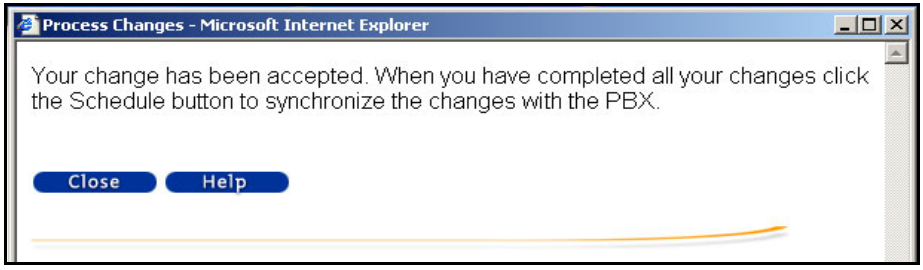


Change confirmation pages

A confirmation page appears when you click Confirm in the change summary page for the General, Keys, or Features tab.

When the User Group access properties allow the Meridian 1 or CS 1000 synchronization option, the page shown in Figure 445 appears.

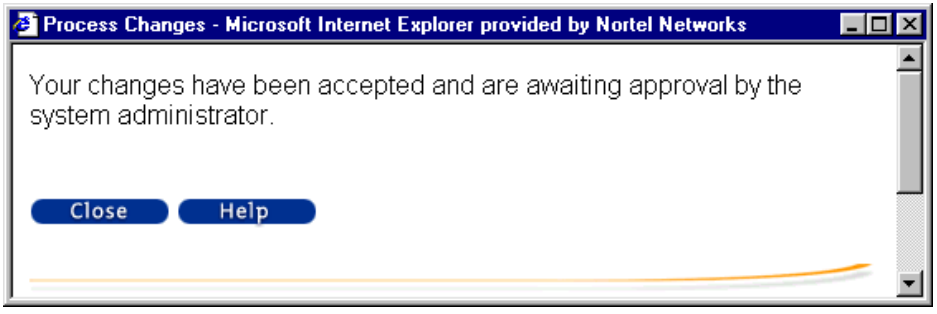
Figure 445
User confirmation with automatic synchronization


Process Changes - Microsoft Internet Explorer
Your change has been accepted. When you have completed all your changes click the Schedule button to synchronize the changes with the PBX.
Close
Help

If the User Group access properties do not permit automatic synchronization, any changes that have been input occur the next time you perform a synchronization, and the page shown in Figure 446 appears.

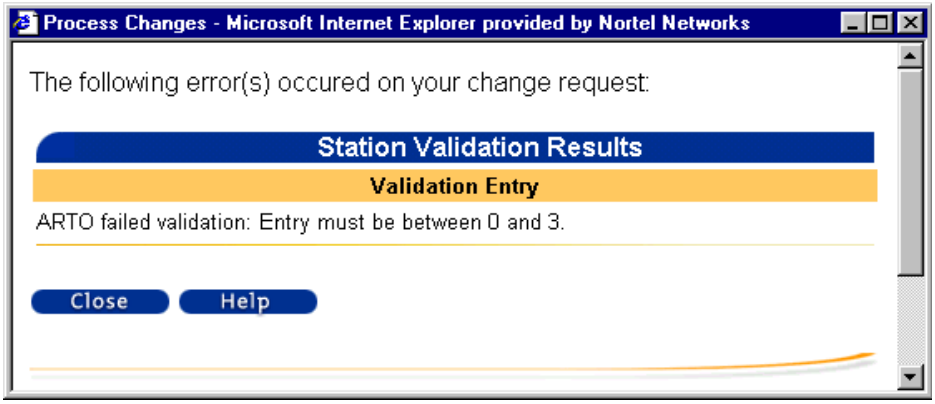
Use Station Administration to view pending changes. Revert any scheduled changes that you do not want to occur prior to synchronization.

Figure 446
User confirmation when system administrator approval is required


Process Changes - Microsoft Internet Explorer provided by Nortel Networks
Your changes have been accepted and are awaiting approval by the system administrator.
Close
Help

If there is a validation error, the user is presented with an error message similar to the example shown in Figure 447.

Figure 447
Example of a validation error message


Process Changes - Microsoft Internet Explorer provided by Nortel Networks
The following error(s) occured on your change request:
Station Validation Results
Validation Entry
ARTO failed validation: Entry must be between 0 and 3.
Close
Help

Billing Reports

The Billing Reports link is visible in the Navigation bar if the user has a Web Reporting Role other than "No Access" defined in their OTM Directory record. Web Reporting Roles are: All, Peer, Managed, Personal and No Access. If the Web Reporting Role is No Access, or if it is left blank, the Billing Reports link is not displayed. Billing Reports requires the Billing Enhanced Package and is available with all three levels of OTM, General, Enhanced, and Premium.

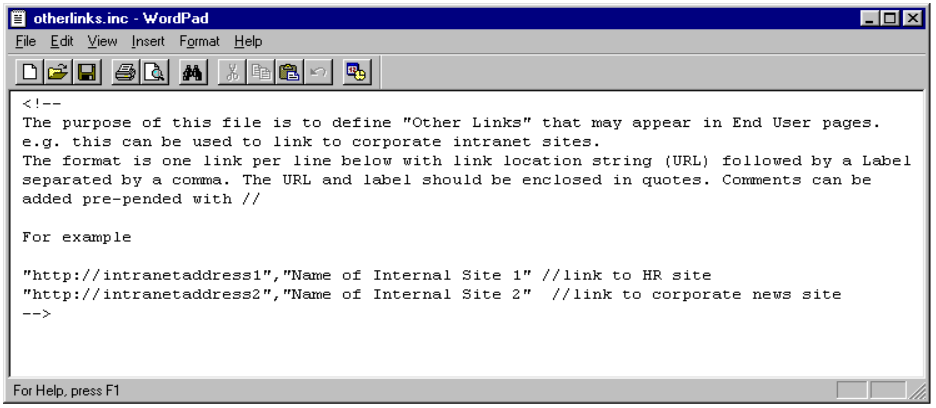
Other links

You can define the Other Links button of the Navigation Bar for Web Desktop Services users. If you do not define links, then this section is not visible. To define Other Links edit the HTML file (Figure 448). The file is located in *<Nortel>\OMServices\OMStation\EndUser\Eng*.

To launch web pages from the Windows or Web Navigator, double-click on the item in the Navigator. You are asked whether you are launching a Terminal or an Application. If you select Application, a web browser window opens. The URL for the application is set in the web URL field in the Properties—Applications tab. This process automatically adds a Generic system in OTM.

To launch an executable file from the Windows Navigator, double-click on the item in the Navigator. You are asked whether you are launching a Terminal or an Application. If you select Application, the executable file will launch. The location for the executable is set in the path field in the Properties—Applications tab.

Figure 448
Other Links


otherlinks.inc - WordPad
File Edit View Insert Format Help
<!--
The purpose of this file is to define "Other Links" that may appear in End User pages.
e.g. this can be used to link to corporate intranet sites.
The format is one link per line below with link location string (URL) followed by a Label
separated by a comma. The URL and label should be enclosed in quotes. Comments can be
added pre-pended with //
For example
"http://intranetaddress1","Name of Internal Site 1" //link to HR site
"http://intranetaddress2","Name of Internal Site 2" //link to corporate news site
-->
For Help, press F1

Meridian Mail

One possible item that could go into the Other Links section is a link to Personal Mailbox Administration (PMA) (Figure 449). This link takes users to the URL for logging in to the Meridian Mail web pages. Users must enter the mailbox number and password to proceed. Once logged in, users can view and change their mailbox configuration. This feature is available with Meridian Mail 13 and later releases

Figure 449.
Meridian Mail Login

Appendix A: Script file summary

This appendix contains a list of all of the script files used for the OTM applications. A script is a pre-written program that contains a set of commands and functions required to perform specific activities. Some scripts are defined for specific PC and Meridian 1 or CS 1000 configurations and are therefore, selected based on each user's configuration. Most OTM scripts, however, are defined for the general operation of the OTM applications and are therefore, automatically selected to perform specific functions within OTM.

Buffers and scripts

The following table is a general list of buffers and scripts.

Table 67
Buffer and Scripts (Part 1 of 2)

Buffer	Format	Script
WTI PollCat III	SL-1 New	PollSl1New.col
WTI PollCat III	SL-1 Old	PollSl1Old.col
Teltronics SEB-II	SL-1 New	SEBSL1New.col
Teltronics SEB-II	SL-1 Old	SEBSL1Old.col
MDR 2000 (with SL-1 chip)	SL-1 New or Old	mdr2000.col
MDR 2000 (w/o SL-1 chip)	SL-1 New	M2KIMG-SL1New.col
Teltronics Site Event Buffer Enterprise Agent (SEBea)	SL-1 New	SEBea-SL1New.col
Teltronics SEBea	SL-1 Old	SEBea-SL1Old.col
WTI PollCat NetLink	SL-1 New	PollNet-SL1New.col
WTI PollCat NetLink	SL-1 Old	PollNet-SL1Old.col
<Direct or from file>	SL -1 New	sl1new.col
<Direct or from file>	SL -1 Old	sl1old.col

Table 67
Buffer and Scripts (Part 2 of 2)

WTI PollCat NetLink <FTP>	SL -1 New	PollNet_FTP_SL1New.col
WTI PollCat NetLink <FTP>	SL -1 Old	PollNet_FTP_SL1Old.col

Common Services scripts

The following script files are used by the OTM Common Services applications. They are automatically selected whenever you run OTM and apply to all of the OTM applications as a whole. You do not need to select these script files to perform a required function:

HAYESMDM.SCR	Functional script used by Common Services applications for connection with Hayes compatible modems.
CUSTMDM.SCR	Functional script used by Common Services applications for connection with customized modems.
M1MODEM.SCR	Functional support script used to access far-end equipment (for example, dispatcher modems).
ERROR.SCR	Functional script required for error handling.

Traffic Analysis scripts

The script files used by OTM Traffic Analysis provide the main functions required for traffic data collection and report generation. The data collection script files are selected when you enter your Meridian 1 or Communication Server 1000 information and communications parameters. The report generation script files are automatically selected when you generate reports.

Real-time traffic data collection

The following script files are used for real-time traffic data collection (no buffer unit). They are automatically selected when you set up this site for real-time traffic data collection (from the OTM Site Configuration application):

LD2.SCR	Main traffic data collection scripts.

LD2INI.SCR	Functional script used by LD2.SCR (used to initialize Meridian 1 and Communication Server 1000 systems to have collection performed hourly).
LOGSL1.SCR	Functional script used by LD2.SCR.

Traffic data collection from MDR-2000

The following script files are used for traffic data collection from an MDR-2000 buffer unit. They are automatically selected when you set up this site for traffic data collection through the MDR-2000 buffer unit (from the OTM Site Configuration application):

M2K.SCR	Main traffic data collection script.
M2KINI.SCR	Functional script used by M2K.SCR (used to initialize Meridian 1 and Communication Server 1000 systems to have collection performed hourly in pass-through mode).

CDR data collection from PollCat III and PollNet Netlink

For the PollNet Netlink via FTP collection scripts, POLLNET_FTP_SL1NEW.COL and POLLNET_FTP_SL1OLD.COL, you must access the Data Collection Configuration function, set the Collection Type to Ethernet, and then enter the following information:

- the IP Address of the buffer unit.
- the name of the file from which collection occurs after the IP address value (e.g., 10.12.0.23:PNLAST).

  If a file name is not specified, then PNLAST is used as the default filename.

- the required Login Name and Password.

The following script files are used for data collection from the PollCat III and PollNet Netlink buffer units

POLLSL1NEW.COL	Data collection script, which collects New format CDR from the PollCat III to produce normalized CDR.
POLLSL1OLD.COL	Data collection script, which collects Old format CDR from the PollCat III to produce normalized CDR.

POLLNET-SL1NEW.COL	Data collection script, which collects New format CDR from the PollNet Netlink to produce normalized CDR.
POLLNET-SL1OLD.COL	Data collection script, which collects Old format CDR from the PollNet Netlink to produce normalized CDR.
POLLNET_FTP_SL1NEW.COL	Data collection script, which collects New format CDR from the PollNet Netlink via FTP to produce normalized CDR.
POLLNET_FTP_SL1OLD.COL	Data collection script, which collects Old format CDR from the PollNet Netlink via FTP to produce normalized CDR.

CDR data collection from SEBea

For these collection scripts, you must access the Data Collection Configuration function and enter the following information:

- Select the Collection Type. Supported collection types are Direct and Dial-up only.
- In the **Scripts** section, enter the required Login Name and Password.
- In the **Script Configuration** section, enter the Agent Name and Host Name. All of these values must match the values set in Teltronic's SEBea.

To configure your SEBea, please contact your distributor. A trained technician is required to configure the SEBea properly.

The following script files are used for data collection from the SEBea buffer unit.

SEBEA-SL1NEW.COL	Data collection script, which collects New format CDR from the SEBea to produce normalized CDR.
SEBEA-SL1OLD.COL	Data collection script, which collects Old format CDR from the SEBea to produce normalized CDR.

CDR data collection from SEB II

The following script files are used for data collection from the SEB II buffer unit:

SEB.SCR	CDR data collection script for SEB II buffer unit.
PARSESL1.SCR	Functional script used by SEB.SCR script file.

SEBNEWX.SCR	New format CDR data collection script for SEB II buffer unit; supports X11 Release 23.
NEWCDRX.SCR	Functional script used by SEBNEWX.SCR script file.

Traffic data collection from PollCat II/III

The following script file is used for traffic data collection from the PollCat II/III buffer units. It is automatically selected when you set up this site for traffic data collection using the PollCat II/III buffer units (from the OTM Site Configuration application):

POLL.SCR	Main traffic data collection script.

Traffic data collection from SEB II

The following script file is used for traffic data collection from the SEB II buffer unit. It is automatically selected when you set up this site for traffic data collection using the SEB II buffer unit (from the OTM Site Configuration application):

SEBTRAF.SCR	Main traffic data collection script.

Traffic Analysis report generation

The following script files are used for report generation. They are automatically selected when you generate Traffic Analysis reports:

AUXPLK.SCR	AVGSOA.SCR	CALPRK.SCR	CBKQUE.SCR
CONSOL.SCR	CSAML1.SCR	CSAML2.SCR	CSAML3.SCR
CSAML4.SCR	CSAML5.SCR	CSAML6.SCR	CSAMLI.SCR
CSAMLK.SCR	CUSCON.SCR	DCHANL.SCR	DTDLAY.SCR
DTNSPD.SCR	FEAKEY.SCR	GLOBAL.SCR	GLPTRF.SCR
GMSGAP.SCR	GNTLPS.SCR	GOHQUE.SCR	GPCLTB.SCR
GPROCL.SCR	GROUTL.SCR	GSUTRF.SCR	GTRNKS.SCR
ICONSL.SCR	IMTCHL.SCR	INPMSG.SCR	INTRKG.SCR
ISDNPD.SCR	ISDNPM.SCR	ISDNPT.SCR	JCTRAF.SCR
JCTRGP.SCR	LPTRAF.SCR	MICRO.SCR	MSGATQ.SCR
MUSBRD.SCR	NCOSVC.SCR	NETLPS.SCR	NETWKS.SCR

NTATSV.SCR	OHKOVT.SCR	OHKQUE.SCR	OMTCHL.SCR
OUTMSG.SCR	PCTLTB.SCR	PRADIO.SCR	PROCLD.SCR
RADPAG.SCR	RANBRD.SCR	RTLREQ.SCR	SELTRM.SCR
SLTRAF.SCR	SRADIO.SCR	SUMCCO.SCR	SUMICO.SCR
SUMSYS.SCR	SUMTRK.SCR	SVCLPS.SCR	TMESSG.SCR
TRUNKS.SCR	TSETST.SCR	WATCON.SCR	WPRCLD.SCR
WTRNKS.SCR			

The following script files are used for the Data Parser as part of the report generation process. They are automatically selected when processing data for Traffic Analysis reports:

TFC000.SCR	TFC001.SCR	TFC002.SCR	TFC003.SCR
TFC004.SCR	TFC005.SCR	TFC006.SCR	TFC007.SCR
TFC008.SCR	TFC009.SCR	TFC10X.SCR	TFC101.SCR
TFC105.SCR	TFN001.SCR	TFN002.SCR	TFN101.SCR
TFS000.SCR	TFS001.SCR	TFS002.SCR	TFS003.SCR
TFS004.SCR	TFS005.SCR	TFS007.SCR	TFS008.SCR
TFS009.SCR	TFS010.SCR	TFS011.SCR	TFS012.SCR
TFS013.SCR	TFS50X.SCR	TFS101.SCR	TFS102.SCR
TFS105.SCR	TFS41X.SCR	TRAFFIC.SCR	TRFAXS.SCR
TRFCDR.SCR	TRFCUS.SCR	TRFNET.SCR	TRFSYS.SCR

Appendix B: Control files included with alarm notification

This appendix displays the control files that are loaded into the OTM PC when the Alarm Notification application is installed. These files are loaded into the default location C:\Nortel\Common Data\Alarm Notification\Control Files unless otherwise specified.

IMPORTANT!

Due to the removal of the support for the device name and namespace "SUCCESSION" in OTM 2.2, perform a global search on all your customized scripts and configuration for Alarm Management and rename all occurrences of "SUCCESSION" to "CALL_SERVER". If a third party alarm management application is used, the Succession namespace “nsSuccession” is obsolete and is no longer used by OTM. Here are some sample script file changes:

- Devices file : Change SUCCESSION 47.99.99.99 to CALL_SERVER 47.99.99.99
- Scripts file: Change $CurrentTrapDevice = "SUCCESSION" to $CurrentTrapDevice = "CALL_SERVER"

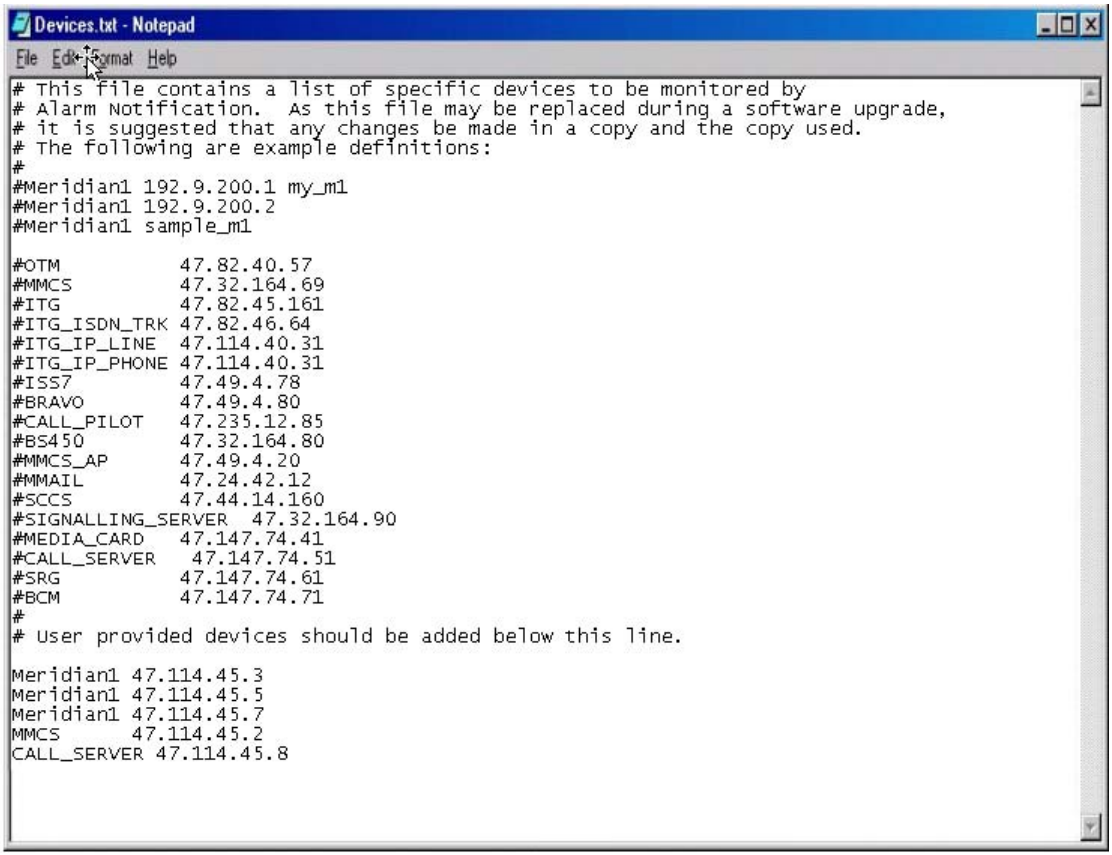
.

Caution: Always use a copy of these files when customizing them for your specific environment. Do not use the original files supplied with your OTM product. These files are overwritten when OTM is reinstalled or upgraded; if you have customized the original files, any changes will be lost.

Devices file

Figure 450 shows the content of the *Devices.txt* file included with the application.

Figure 450
Device.txt



Configuration file

This section shows the content of the *Config.txt* file included with the application.

```
# These are the SNMP trap definitions for Nortel supported devices.

# This file is replaced during a software upgrade, so we suggest

# that you backup this file before an upgrade and also before changing it.

device BRAVO 6.1 6.2 6.3 6.4 6.5 6.6 {

   1.3.6.1.4.1.562.3.11.4.4.1.7.2.0 string  $SystemComponent "System Component"

   1.3.6.1.4.1.562.3.11.4.4.1.7.3.0 string  $DeviceTime "Device Time"

   1.3.6.1.4.1.562.3.11.4.4.1.7.4.0 integer $ActiveListStatus "Active Status"

   1.3.6.1.4.1.562.3.11.4.4.1.7.5.0 integer $Severity "Severity"

   1.3.6.1.4.1.562.3.11.4.4.1.7.6.0 integer $AlarmType "Alarm Type"

   1.3.6.1.4.1.562.3.11.4.4.1.7.7.0 integer $ProbableCause "Probable Cause"

   1.3.6.1.4.1.562.3.11.4.4.1.7.8.0 string  $ErrorCode "Error Code"

   1.3.6.1.4.1.562.3.11.4.4.1.7.9.0 string  $OperatorData "Operator Data"

}

device BS450 0.0 1.0 2.0 3.0 4.0 5.0 {

   1.3.6.1.2.1.2.2.1.1.1 integer           $Port1                  "Port 1"

   1.3.6.1.2.1.2.2.1.1.2 integer           $Port2                  "Port 2"

   1.3.6.1.2.1.2.2.1.1.3 integer           $Port3                  "Port 3"

   1.3.6.1.2.1.2.2.1.1.4 integer           $Port4                  "Port 4"

   1.3.6.1.2.1.2.2.1.1.5 integer           $Port5                  "Port 5"

   1.3.6.1.2.1.2.2.1.1.6 integer           $Port6                  "Port 6"

   1.3.6.1.2.1.2.2.1.1.7 integer           $Port7                  "Port 7"

   1.3.6.1.2.1.2.2.1.1.8 integer           $Port8                  "Port 8"
```

```
   1.3.6.1.2.1.2.2.1.1.9 integer            $Port9                  "Port 9"

   1.3.6.1.2.1.2.2.1.1.10 integer           $Port10                 "Port 10"

   1.3.6.1.2.1.2.2.1.1.11 integer           $Port11                 "Port 11"

   1.3.6.1.2.1.2.2.1.1.12 integer           $Port12                 "Port 12"

   1.3.6.1.2.1.2.2.1.1.13 integer           $Port13                 "Port 13"

   1.3.6.1.2.1.2.2.1.1.14 integer           $Port14                 "Port 14"

   1.3.6.1.2.1.2.2.1.1.15 integer           $Port15                 "Port 15"

   1.3.6.1.2.1.2.2.1.1.16 integer           $Port16                 "Port 16"

   1.3.6.1.2.1.2.2.1.1.17 integer           $Port17                 "Port 17"

   1.3.6.1.2.1.2.2.1.1.18 integer           $Port18                 "Port 18"

   1.3.6.1.2.1.2.2.1.1.19 integer           $Port19                 "Port 19"

   1.3.6.1.2.1.2.2.1.1.20 integer           $Port20                 "Port 20"

   1.3.6.1.2.1.2.2.1.1.21 integer           $Port21                 "Port 21"

   1.3.6.1.2.1.2.2.1.1.22 integer           $Port22                 "Port 22"

   1.3.6.1.2.1.2.2.1.1.23 integer           $Port23                 "Port 23"

   1.3.6.1.2.1.2.2.1.1.24 integer           $Port24                 "Port 24"

}


device CALL_PILOT 6.1 6.2 6.3 6.4 {

1.3.6.1.4.1.562.3.8.2.5.2.1.1.0 integer  $AlarmSeqNum            "Alarm Seq Num"

1.3.6.1.4.1.562.3.8.2.5.2.1.2.0 string   $DeviceTime            "Device Time"

1.3.6.1.4.1.562.3.8.2.5.2.1.3.0 integer  $AlarmCode              "Error Code"

1.3.6.1.4.1.562.3.8.2.5.2.1.4.0 integer  $AlarmType              "Alarm Type"

1.3.6.1.4.1.562.3.8.2.5.2.1.5.0 integer  $Severity               "Severity"
```

```
1.3.6.1.4.1.562.3.8.2.5.2.1.6.0 integer  $TenantID                "Tenant ID"

1.3.6.1.4.1.562.3.8.2.5.2.1.7.0 integer  $CustomerID              "Customer ID"

1.3.6.1.4.1.562.3.8.2.5.2.1.8.0 string   $SystemComponent         "System
Component"

1.3.6.1.4.1.562.3.8.2.5.2.1.9.0 string   $OperatorData            "Operator Data"

}

device ISS7 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.27.2.1.7.2.0 string      $SystemComponent "System Component"

1.3.6.1.4.1.562.27.2.1.7.3.0 string      $DeviceTime "Device Time"

1.3.6.1.4.1.562.27.2.1.7.4.0 integer     $ActiveListStatus "Active Status"

1.3.6.1.4.1.562.27.2.1.7.5.0 integer     $Severity                "Severity"

1.3.6.1.4.1.562.27.2.1.7.6.0 integer     $AlarmType               "Alarm Type"

1.3.6.1.4.1.562.27.2.1.7.7.0 integer     $ProbableCause          "Probable Cause"

1.3.6.1.4.1.562.27.2.1.7.8.0 string      $ErrorCode               "Ntp Index"

1.3.6.1.4.1.562.27.2.1.7.9.0 string      $OperatorData            "Operator Data"

}


device ITG 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.3.11.1.4.1.7.2.0 string  $SystemComponent         "System
Component"

1.3.6.1.4.1.562.3.11.1.4.1.7.3.0 string  $DeviceTime              "Device Time"

1.3.6.1.4.1.562.3.11.1.4.1.7.4.0 integer $ActiveListStatus        "Active Status"

1.3.6.1.4.1.562.3.11.1.4.1.7.5.0 integer $Severity                "Severity"

1.3.6.1.4.1.562.3.11.1.4.1.7.6.0 integer $AlarmType               "Alarm Type"

1.3.6.1.4.1.562.3.11.1.4.1.7.7.0 integer $ProbableCause          "Probable Cause"
```

```
1.3.6.1.4.1.562.3.11.1.4.1.7.8.0 string  $ErrorCode              "Ntp Index"

1.3.6.1.4.1.562.3.11.1.4.1.7.9.0 string  $OperatorData           "Operator Data"

}

device ITG_ISDN_TRK 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.3.11.2.4.1.7.2.0 string  $SystemComponent "System Component"

1.3.6.1.4.1.562.3.11.2.4.1.7.3.0 string  $DeviceTime             "Device Time"

1.3.6.1.4.1.562.3.11.2.4.1.7.4.0 integer $ActiveListStatus       "Active Status"

1.3.6.1.4.1.562.3.11.2.4.1.7.5.0 integer $Severity               "Severity"

1.3.6.1.4.1.562.3.11.2.4.1.7.6.0 integer $AlarmType              "Alarm Type"

1.3.6.1.4.1.562.3.11.2.4.1.7.7.0 integer $ProbableCause         "Probable Cause"

1.3.6.1.4.1.562.3.11.2.4.1.7.8.0 string  $ErrorCode              "Ntp Index"

1.3.6.1.4.1.562.3.11.2.4.1.7.9.0 string  $OperatorData           "Operator Data"

}

device ITG_IP_LINE 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string  $SystemComponent        "System
Component"

1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string  $DeviceTime             "Device Time"

1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus       "Active Status"

1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity               "Severity"

1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType              "Alarm Type"

1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause         "Probable Cause"

1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string  $ErrorCode              "Ntp Index"

1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string  $OperatorData           "Operator Data"

             }
```

```
device ITG_IP_PHONE 6.1 6.2 6.3 6.4 6.5 6.6 {
1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string  $SystemComponent  "System Component"
1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string  $DeviceTime             "Device Time"
1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus       "Active Status"
1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity               "Severity"
1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType              "Alarm Type"
1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause         "Probable Cause"
1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string  $ErrorCode              "Ntp Index"
1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string  $OperatorData           "Operator Data"
}
device MDECT 6.1 6.2 6.3 6.4 6.6 6.9 6.10 {
1.3.6.1.4.1.1417.1.1.1.5.0     string     $DeviceTime             "Device Time"
1.3.6.1.4.1.1417.1.1.3.2.1.2.0 string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.3.3.1.4.0 string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.3.3.1.8.0 string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.3.9.0     string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.3.5.1.0   string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.3.7.0     string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.2.1.6.0   string     $OperatorData           "Operator Data"
1.3.6.1.4.1.1417.1.1.3.1.0     string     $ErrorCode              "Error Code"
}

device MMAIL 6.1 6.2 6.3 6.4 {
   1.3.6.1.4.1.562.3.10.2.1.1.0  string     $DeviceTime            "Device Time"
```

```
1.3.6.1.4.1.562.3.10.2.1.2.0  integer    $Severity               "Severity"

1.3.6.1.4.1.562.3.10.2.1.3.0  integer    $SeerType               "Seer Type"

1.3.6.1.4.1.562.3.10.2.1.4.0  string     $ErrorCode              "Error Code"

1.3.6.1.4.1.562.3.10.2.1.5.0  string     $SystemComponent "System Component"

1.3.6.1.4.1.562.3.10.2.1.6.0  integer    $SeerNode               "Seer Node"

1.3.6.1.4.1.562.3.10.2.1.7.0  string     $System                 "System"

1.3.6.1.4.1.562.3.10.2.1.8.0  string     $OperatorData           "Operator Data"

1.3.6.1.4.1.562.3.10.2.1.9.0  string     $Text                   "Text"

1.3.6.1.4.1.562.3.10.2.1.10.0 string     $ExpertData             "Expert Data"

}


device MMCS 6.10 {

1.3.6.1.4.1.562.3.3.7.1.0 integer        $AlarmSeqNum            "Alarm Seq Num"

1.3.6.1.4.1.562.3.3.7.2.0 string         $DeviceTime             "Device Time"

1.3.6.1.4.1.562.3.3.7.3.0 integer        $Severity               "Severity"

1.3.6.1.4.1.562.3.3.7.4.0 string         $ErrorCode              "Error Code"

1.3.6.1.4.1.562.3.3.7.5.0 string         $SystemComponent "System Component"

1.3.6.1.4.1.562.3.3.7.6.0 string         $ComponentAddress "Component Address"

1.3.6.1.4.1.562.3.3.7.7.0 string         $Text                   "Text"

1.3.6.1.4.1.562.3.3.7.8.0 string         $OperatorData           "Operator Data"

1.3.6.1.4.1.562.3.3.7.9.0 string         $ExpertData             "Expert Data"

1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts

}
```

```
device MMCS_AP 6.1 6.2 6.3 6.4 6.5 6.6 {
1.3.6.1.4.1.562.27.2.1.7.2.0 string      $SystemComponent "System Component"
1.3.6.1.4.1.562.27.2.1.7.3.0 string      $DeviceTime              "Device Time"
1.3.6.1.4.1.562.27.2.1.7.4.0 integer     $ActiveListStatus        "Active Status"
1.3.6.1.4.1.562.27.2.1.7.5.0 integer     $Severity                "Severity"
1.3.6.1.4.1.562.27.2.1.7.6.0 integer     $AlarmType               "Alarm Type"
1.3.6.1.4.1.562.27.2.1.7.7.0 integer     $ProbableCause          "Probable Cause"
1.3.6.1.4.1.562.27.2.1.7.8.0 string      $ErrorCode               "Error Code"
1.3.6.1.4.1.562.27.2.1.7.9.0 string      $OperatorData            "Operator Data"
}

device OTM 6.1 6.2 6.3 6.4 6.5 6.6 {
1.3.6.1.4.1.562.50.1.2.1.0  integer      $AlarmSeqNum             "Alarm Seq Num"
1.3.6.1.4.1.562.50.1.2.2.0  string       $DeviceTime              "Device Time"
1.3.6.1.4.1.562.50.1.2.3.0  integer      $Severity                "Severity"
1.3.6.1.4.1.562.50.1.2.4.0  integer      $NameSpace               "Name Space"
1.3.6.1.4.1.562.50.1.2.5.0  string       $ErrorCode               "Error Code"
1.3.6.1.4.1.562.50.1.2.6.0  string       $Site                    "Site"
1.3.6.1.4.1.562.50.1.2.7.0  string       $System                  "System"
1.3.6.1.4.1.562.50.1.2.8.0  string       $SystemComponent "System Component"
1.3.6.1.4.1.562.50.1.2.9.0  string       $OriginatingAgent        "Orig. Agent"
1.3.6.1.4.1.562.50.1.2.10.0 integer      $TrapType                "Trap Type"
1.3.6.1.4.1.562.50.1.2.11.0 string      $AssocUser              "Associated User"
1.3.6.1.4.1.562.50.1.2.12.0 string       $OperatorData            "Operator Data"
```

```
1.3.6.1.4.1.562.50.1.2.13.0 string       $ExpertData              "Expert Data"

1.3.6.1.4.1.562.50.1.2.14.0 string       $Text                    "Text"

}


device SCCS 6.1 6.2 6.3 6.4 {

1.3.6.1.4.1.562.3.8.1.5.2.1.1.0 integer  $AlarmSeqNum             "Alarm Seq Num"

1.3.6.1.4.1.562.3.8.1.5.2.1.2.0 string   $DeviceTime              "Device Time"

1.3.6.1.4.1.562.3.8.1.5.2.1.3.0 integer  $AlarmCode              "Error Code"

1.3.6.1.4.1.562.3.8.1.5.2.1.4.0 integer  $AlarmType              "Alarm Type"

1.3.6.1.4.1.562.3.8.1.5.2.1.5.0 integer  $Severity               "Severity"

1.3.6.1.4.1.562.3.8.1.5.2.1.6.0 integer  $TenantID               "Tenant ID"

1.3.6.1.4.1.562.3.8.1.5.2.1.7.0 integer  $CustomerID             "Customer ID"

1.3.6.1.4.1.562.3.8.1.5.2.1.8.0 string   $SystemComponent "System Component"

1.3.6.1.4.1.562.3.8.1.5.2.1.9.0 string   $OperatorData           "Operator Data"

}


device SL100 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.50.1.2.1.0  integer      $AlarmSeqNum             "Alarm Seq Num"

1.3.6.1.4.1.562.50.1.2.2.0  string       $DeviceTime              "Device Time"

1.3.6.1.4.1.562.50.1.2.3.0  integer      $Severity                "Severity"

1.3.6.1.4.1.562.50.1.2.4.0  integer      $NameSpace               "Name Space"

1.3.6.1.4.1.562.50.1.2.5.0  string       $ErrorCode               "Error Code"

1.3.6.1.4.1.562.50.1.2.6.0  string       $Site                    "Site"

1.3.6.1.4.1.562.50.1.2.7.0  string       $System                  "System"
```

```
1.3.6.1.4.1.562.50.1.2.8.0  string       $SystemComponent "System Component"

1.3.6.1.4.1.562.50.1.2.9.0  string       $OriginatingAgent       "Orig. Agent"

1.3.6.1.4.1.562.50.1.2.12.0 string       $OperatorData           "Operator Data"

1.3.6.1.4.1.562.50.1.2.13.0 string       $ExpertData             "Expert Data"

1.3.6.1.4.1.562.50.1.2.14.0 string       $Text                   "Text"

}

#  Meridian 1 Main Cabinet

device Meridian1 6.10 {

1.3.6.1.4.1.562.3.3.7.1.0  integer       $AlarmSeqNum            "Alarm Seq Num"

1.3.6.1.4.1.562.3.3.7.2.0  string        $DeviceTime             "Device Time"

1.3.6.1.4.1.562.3.3.7.3.0  integer       $Severity               "Severity"

1.3.6.1.4.1.562.3.3.7.4.0  string        $ErrorCode              "Error Code"

1.3.6.1.4.1.562.3.3.7.5.0  string        $SystemComponent        "System
Component"

1.3.6.1.4.1.562.3.3.7.6.0  string        $ComponentAddress       "Component
Address"

1.3.6.1.4.1.562.3.3.7.7.0  string        $Text                   "Text"

1.3.6.1.4.1.562.3.3.7.8.0  string        $OperatorData           "Operator Data"

1.3.6.1.4.1.562.3.3.7.9.0  string        $ExpertData             "Expert Data"

1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts

}

# Call Server 1000S and 1000M

device CALL_SERVER 6.10 {

1.3.6.1.4.1.562.3.3.7.1.0  integer       $AlarmSeqNum            "Alarm Seq Num"

   1.3.6.1.4.1.562.3.3.7.2.0  string        $DeviceTime             "Device Time"
```

```
1.3.6.1.4.1.562.3.3.7.3.0  integer       $Severity               "Severity"

1.3.6.1.4.1.562.3.3.7.4.0  string        $ErrorCode              "Error Code"

1.3.6.1.4.1.562.3.3.7.5.0  string        $SystemComponent "System Component"

1.3.6.1.4.1.562.3.3.7.6.0  string        $ComponentAddress "Component Address"

1.3.6.1.4.1.562.3.3.7.7.0  string        $Text                   "Text"

1.3.6.1.4.1.562.3.3.7.8.0  string        $OperatorData           "Operator Data"

1.3.6.1.4.1.562.3.3.7.9.0  string        $ExpertData             "Expert Data"

1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts

}

# Media Card

device MEDIA_CARD 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string  $SystemComponent "System Component"

1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string  $DeviceTime             "Device Time"

1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus       "Active Status"

1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity               "Severity"

1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType              "Alarm Type"

1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause         "Probable Cause"

1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string  $ErrorCode              "Ntp Index"

1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string  $OperatorData           "Operator Data"

}

# Signalling Server

device SIGNALLING_SERVER 6.1 6.2 6.3 6.4 6.5 6.6 {

1.3.6.1.4.1.562.3.21.5.4.1.7.2.0 string  $SystemComponent        "System
Component"

1.3.6.1.4.1.562.3.21.5.4.1.7.3.0 string  $DeviceTime             "Device Time"
```

```
1.3.6.1.4.1.562.3.21.5.4.1.7.4.0 integer $ActiveListStatus       "Active Status"

1.3.6.1.4.1.562.3.21.5.4.1.7.5.0 integer $Severity               "Severity"

1.3.6.1.4.1.562.3.21.5.4.1.7.6.0 integer $AlarmType              "Alarm Type"

1.3.6.1.4.1.562.3.21.5.4.1.7.7.0 integer $ProbableCause         "Probable Cause"

1.3.6.1.4.1.562.3.21.5.4.1.7.8.0 string  $ErrorCode              "Ntp Index"

1.3.6.1.4.1.562.3.21.5.4.1.7.9.0 string  $OperatorData           "Operator Data"

}

# Survivable Remote Gateway Branch Media Gateway(SRG)

device SRG 6.1 6.2 6.3 {

1.3.6.1.4.1.562.37.3.1.1.1 integer $AlarmCode                   "Error Code"

1.3.6.1.4.1.562.37.3.1.1.2 string $SystemComponent             "System Component"

1.3.6.1.4.1.562.37.3.1.1.3 string $DeviceTime                   "Device Time"

1.3.6.1.4.1.562.37.3.1.1.4 string $OperatorData                 "Operator Data"

}

# Business Communications Manager (BCM)

device BCM 6.1 6.2 6.3 {

1.3.6.1.4.1.562.37.3.1.1.1 integer $AlarmCode                   "Error Code"

1.3.6.1.4.1.562.37.3.1.1.2 string $SystemComponent             "System Component"

1.3.6.1.4.1.562.37.3.1.1.3 string $DeviceTime                   "Device Time"

1.3.6.1.4.1.562.37.3.1.1.4 string $OperatorData                 "Operator Data"

}

# Add user supplied device definitions below this comment line.
```

Sample Alarm Notification script file

This section shows the content of the *sample_an_script.txt* included with the OTM application.

```
// *********************************************************************************************
//
//                                  Alarm Notification Scripts
//
// *********************************************************************************************


// *********************************************************************************************
// Map severities from the various traps that OTM receives into a standard severity list.
// *********************************************************************************************

counter $NormalizedSeverity := 0;

counter Undetermined := 0;
counter Critical     := 1;
counter Major        := 2;
counter Minor        := 3;
counter Warning      := 4;
counter Info         := 5;
counter Cleared      := 6;


// ============================================================================
//                            Map OTM severities
// ============================================================================
// 1 -> Critical; 2 -> Major; 3 -> Minor; 4 -> Warning; 5 -> Info; 6 -> Cleared;x -> Info

script AssignOTMSeverities when ( $CurrentTrapDevice = "OTM" ) {
    function assignit() {
        if ($Severity=Critical) {
            $NormalizedSeverity:=Critical;
        }else{ if ($Severity=Major) {
            $NormalizedSeverity:=Major;
        }else{ if ($Severity=Minor) {
            $NormalizedSeverity:=Minor;
        }else{ if ($Severity=Info) {
            $NormalizedSeverity:=Info;
        }else{ if ($Severity=Warning) {
            $NormalizedSeverity:=Warning;
        }else{ if ($Severity=Cleared){
            $NormalizedSeverity:=Cleared;
        }else{
            $NormalizedSeverity:=Info;
        }}}}}}
    }
    rule assign_severity {
        if ($CurrentTrapDevice="OTM") {
```

```
            assignit();
        }
    }
}

//=================================================
//                Map SRG/BCM severities
//=================================================
// Map from specific trap value, not variable (1 -> Warning,2 -> Minor,3 -> Critical)

script AssignSRGSeverities when ( $CurrentTrapDevice = "SRG" or $CurrentTrapDevice = "BCM")
{
  function assignit() {
    if ($CurrentTrapMinor=2)
    {
      $NormalizedSeverity:=Minor;
    }
    else
    {
      if ($CurrentTrapMinor=3)
      {
        $NormalizedSeverity:=Critical;
      }
      else
      {
        $NormalizedSeverity:=Warning;
      }
    }
  }
  rule assign_severity
  {
    if ($CurrentTrapDevice = "SRG" or $CurrentTrapDevice = "BCM")
    {
      assignit();
    }
  }
}

// ============================================================================
//                            Map MDECT severities
// ============================================================================

// All MDECT Alarms should be Critical

script AssignMDECTSeverities when ( $CurrentTrapDevice = "MDECT" )
{
  function assignit()
  {
    $NormalizedSeverity := Critical;
  }
  rule assign_severity
  {
    if ($CurrentTrapDevice = "MDECT")
```

```
    {
      assignit();
    }
  }
}

// ============================================================================
//           Map Meridian1/MMCS/CALL_SERVER Open Alarms
// ============================================================================
// 1 -> Minor; 2 -> Major; 3 -> Critical; 4 -> Warning; 5 -> Cleared; x -> Info

script convertM1Severities when ( $CurrentTrapDevice = "Meridian1"
      or $CurrentTrapDevice = "MMCS"
      or $CurrentTrapDevice = "CALL_SERVER")
{
  function convertit()
  {
    if ($Severity=1)
    {
      $NormalizedSeverity:=Minor;
    }
    else
    {
      if ($Severity=2)
      {
        $NormalizedSeverity:=Major;
      }
      else
      {
        if ($Severity=3)
        {
          $NormalizedSeverity:=Critical;
        }
        else
        {
          if ($Severity=4)
          {
            $NormalizedSeverity:=Warning;
          }
          else
          {
            if ($Severity=5)
            {
              $NormalizedSeverity:=Cleared;
            }
            else
            {
              $NormalizedSeverity:=Info;
            }
          }
        }
      }
    }
```

```
  }
// ---------------------------------------------------------------
  rule severity_conversion
  {
    if ($CurrentTrapDevice = "Meridian1"
          or $CurrentTrapDevice = "MMCS" or $CurrentTrapDevice = "CALL_SERVER")
    {
      convertit();
    }
  }
}

// ================================================================================
// Map severities from devices other than OTM, MDECT, Meridian1
//       and CALL_SERVER
// ================================================================================
// 1 -> Critical; 2 -> Major; 3 -> Minor; 4 -> (CallPilot::Info, Warning); 5 ->
(CallPilot::Unknown, Cleared); x -> Undetermined

script convertSeverities when ($CurrentTrapDevice != "OTM"
      and $CurrentTrapDevice != "Meridian1"
      and $CurrentTrapDevice != "MMCS"
      and $CurrentTrapDevice != "MDECT" and $CurrentTrapDevice != "CALL_SERVER"
      and $CurrentTrapDevice != "MDECT" and $CurrentTrapDevice != "SRG"
      and $CurrentTrapDevice != "BCM")
{

    function convertit() {
        if ($Severity=1) {
            $NormalizedSeverity:=Critical;
        }else{ if ($Severity=2){
            $NormalizedSeverity:=Major;
        }else{ if ($Severity=3){
            $NormalizedSeverity:=Minor;
        }else{ if ($Severity=4){
            if ($CurrentTrapDevice="CALL_PILOT"){
                $NormalizedSeverity:=Info;
            }else{
                $NormalizedSeverity:=Warning;
            }
        }else{ if ($Severity=5){
            if ($CurrentTrapDevice="CALL_PILOT"){
                $NormalizedSeverity:=Info;
            }else{
                $NormalizedSeverity:=Cleared;
            }
        }else{
            $NormalizedSeverity:=Info;
        }}}}}
    }

  rule severity_conversion
  {
```

```
    if ($CurrentTrapDevice !="OTM" and $CurrentTrapDevice != "Meridian1"
          and $CurrentTrapDevice != "MMCS" and $CurrentTrapDevice != "MDECT"
          and $CurrentTrapDevice != "CALL_SERVER" and $CurrentTrapDevice != "SRG"
          and $CurrentTrapDevice != "BCM")
    {
      convertit();
    }
  }
}


// ********************************************************************************************
//                                    Assign $NameSpace
// ********************************************************************************************

counter nsOtm               := 1;
counter nsMeridian1         := 2;
counter nsCallPilot         := 3;
counter nsMeridianMail      := 4;
counter nsSl100             := 5;
counter nsPassport          := 6;
counter nsItg               := 7;
counter nsBravo             := 8;
counter nsIss7              := 9;
counter nsMDECT             := 10;
counter nsSccs              := 11;
counter nsMeridianMailLink  := 12;
counter nsGenericOrUnknown  := 13;
counter nsCallServer        := 14;
counter nsMediaCard         := 15;
counter nsSigServer         := 16;
counter nsSuccessionUnused  := 17;
counter nsBcmSrg            := 18;

script assignNameSpace
{
  function ns()
  {
    if ($CurrentTrapDevice="OTM")
    {
      // Original $CurrentTrapDevice is retained
    }
    else
    {
      if ( $CurrentTrapDevice = "Meridian1")
      {
        $NameSpace := nsMeridian1;
      }
      else
      {
        if ( $CurrentTrapDevice = "CALL_PILOT" )
        {
          $NameSpace := nsCallPilot;
```

```
}
else
{
  if ( $CurrentTrapDevice = "MMCS" )
  {
    $NameSpace := nsMeridianMail;
  }
  else
  {
    if ( $CurrentTrapDevice = "ITG"
          or $CurrentTrapDevice = "ITG_ISDN_TRK"
          or $CurrentTrapDevice = "ITG_IP_LINE"
          or $CurrentTrapDevice = "ITG_IP_PHONE" )
    {
      $NameSpace := nsItg;
    }
    else
    {
      if ( $CurrentTrapDevice = "BRAVO" )
      {
        $NameSpace := nsBravo;
      }
      else
      {
        if ( $CurrentTrapDevice = "ISS7" )
        {
          $NameSpace := nsIss7;
        }
        else
        {
          if ( $CurrentTrapDevice = "MDECT" )
          {
            $NameSpace := nsMDECT;
          }
          else
          {
            if ( $CurrentTrapDevice = "SCCS" )
            {
              $NameSpace := nsSccs;
            }
            else
            {
              if ( $CurrentTrapDevice = "MEDIA_CARD" )
              {
                $NameSpace := nsMediaCard;
              }
              else
              {
                if ( $CurrentTrapDevice = "SIGNALLING_SERVER" )
                {
                  $NameSpace := nsSigServer;
                }
                else
```

```
                        {
                          if ( $CurrentTrapDevice = "CALL_SERVER" )
                          {
                            $NameSpace := nsCallServer;
                          }
                          else
                          {
                            if ($CurrentTrapDevice = "BCM" or $CurrentTrapDevice = "SRG")
                            {
                              $NameSpace := nsBcmSrg;
                            }
                            else
                            {
                              $NameSpace := nsGenericOrUnknown;
                            }
                          }
                        }
                      }
                    }
                  }
                }
              }
            }
          }
        }
      }
    }
  }
  rule ns1
  {
    if (1)
    {
      ns();
    }
  }
}

// ****************************************************************************
//                            Console and Log Files
// ****************************************************************************

// ============================================================================
// This is a sample definition for using a log file.  All events sent
//   to this notification will be appended to the filename defined below.
//   Please note that Windows "long" file names are not supported.
// ============================================================================

notification file sample_file {
   filename:="c:\sample_log.txt";
}

script ConsoleAndLog
{
```

```
rule check_Meridian1_critical
{
  if ( $CurrentTrapDevice = "Meridian1" and $NormalizedSeverity = Critical)
  {
    // print event to console
    send( con,
          "--> Critical Meridian1 alarm received! ",
          $ErrorCode," - " ,                  // M1 error code
          $CurrentPCTime, " - ",              // Time that PC received the alarm
          $CurrentTrapSource," - " ,          // Name of this M1
          $DeviceTime," - " ,                 // Timestamp from M1
          $Text," - ",                        // Text with error message
          $OperatorData                       // More text with error message
    );
    // append event to log file
    send(sample_file,"--> Critical M1 alarm received! ",
          $ErrorCode," - " ,                  // M1 error code
          $CurrentPCTime, " - ",              // Time that PC received the alarm
          $CurrentTrapSource," - " ,          // Name of this M1
          $DeviceTime," - " ,                 // Timestamp from M1
          $Text," - ",                        // Text with error message
          $OperatorData                       // More text with error message
    );
  }
}

rule check_SCCS_critical
{
  if ( $CurrentTrapDevice = "SCCS" and $NormalizedSeverity = Critical )
  {
    // print event to console
    send( con,
          "--> Critical SCCS alarm received! ",
          $AlarmCode," - " ,                   // SCCS alam code
          $CurrentPCTime, " - ",              // Time that PC received the alarm
          $CurrentTrapSource," - " ,          // Name of this SCCS
          $DeviceTime," - " ,                 // Timestamp from SCCS
          $OperatorData                       // text with error message
    );

    // append event to log file
    send(sample_file,"--> Critical SCCS alarm received! ",
          $AlarmCode," - " ,                   // SCCS alam code
          $CurrentPCTime, " - ",              // Time that PC received the alarm
          $CurrentTrapSource," - " ,          // Name of this SCCS
          $DeviceTime," - " ,                 // Timestamp from SCCS
          $OperatorData                       // text with error message
    );
  }
}

rule check_CallPilot_critical
{
```

```
    if ( $CurrentTrapDevice = "CALL_PILOT" and $NormalizedSeverity = Critical )
    {
      // print event to console
      send( con,
            "--> Critical CallPilot alarm received! ",
            $AlarmCode," - " ,                    // CP alam code
            $CurrentPCTime, " - ",               // Time that PC received the alarm
            $CurrentTrapSource," - " ,           // Name of this CP
            $DeviceTime," - " ,                  // Timestamp from CP
            $OperatorData                        // text with error message
      );

      // append event to log file
      send(sample_file,"--> Critical CallPilot alarm received! ",
            $AlarmCode," - " ,                    // CP alam code
            $CurrentPCTime, " - ",               // Time that PC received the alarm
            $CurrentTrapSource," - " ,           // Name of this CP
            $DeviceTime," - " ,                  // Timestamp from CP
            $OperatorData                        // text with error message
      );
    }
  }

  rule check_CALL_SERVER_critical
  {
    if ( $CurrentTrapDevice = "CALL_SERVER" and $NormalizedSeverity = Critical )
    {
      // print event to console
      send( con,
            "--> Critical CALL_SERVER alarm received! ",
            $ErrorCode," - " ,               // CALL_SERVER error code
            $CurrentPCTime, " - ",           // Time that PC received the alarm
            $CurrentTrapSource," - " ,       // Name of this CALL_SERVER
            $DeviceTime," - " ,              // Timestamp from CALL_SERVER
            $Text," - ",                     // Text with error message
            $OperatorData                    // More text with error message
      );

      // append event to log file
      send(sample_file,"--> Critical CALL_SERVER alarm received! ",
            $ErrorCode," - " ,               // CALL_SERVER error code
            $CurrentPCTime, " - ",           // Time that PC received the alarm
            $CurrentTrapSource," - " ,       // Name of this CALL_SERVER
            $DeviceTime," - " ,              // Timestamp from CALL_SERVER
            $Text," - ",                     // Text with error message
            $OperatorData                    // More text with error message
      );
    }
  }
  rule check_BCM_SRG_critical
  {
    if ( ($CurrentTrapDevice = "BCM" or $CurrentTrapDevice = "SRG") and $NormalizedSeverity
= Critical )
```

```
    {
      // print event to console
      send( con,
            "--> Critical BCM/SRG alarm received! ",
            $AlarmCode," - " ,              // BCM/SRG Alarm code
            $CurrentPCTime, " - ",          // Time that PC received the alarm
            $SystemComponent, " - ",        // System Component
            $DeviceTime," - " ,             // Timestamp from BCM/SRG
            $OperatorData                   // More text with error message
      );
      // append event to log file
      send(sample_file,
            "--> Critical BCM/SRG alarm received! ",
            $AlarmCode," - " ,              // BCM/SRG Alarm code
            $CurrentPCTime, " - ",          // Time that PC received the alarm
            $SystemComponent, " - ",        // System Component
            $DeviceTime," - " ,             // Timestamp from BCM/SRG
            $OperatorData                   // More text with error message
      );
    }
  }
}


// ****************************************************************************
//                              Numeric and Alpha Pagers
// ****************************************************************************

// ============================================================================
// This is a sample definition for using a numeric pager
//   To use, the phone number should be changed to your pager number
//   and the notification (as well as the references to it) should be
//   uncommented.
// ============================================================================

/*
notification npager sample_numeric_pager {
   phone:="9,555-1212";
}
*/

// ============================================================================
// This is a sample definition for using an alpha pager
//   To use, the phone number should be changed to your pager number,
//   your PIN number should be added, and the notification (as well
//   as the references to it) should be uncommented.
// ============================================================================

/*
notification apager sample_alpha_pager {
   phone:="9,555-1212";
   pin:="101565";
}
```

```
*/

script Pagers {
/*
   function forward_apager() {
      if ($CurrentTrapSource = "SCCS" or $CurrentTrapSource = "CALL_PILOT") {
      send( sample_alpha_pager, $CurrentTrapSource,":", $AlarmCode, "!" );
      }
   else {
   send( sample_alpha_pager, $CurrentTrapSource,":", $ErrorCode, "!" );
    }
     }

     rule forward_apager_critical {
        if ($NormalizedSeverity = Critical ) {
        forward_apager();
     }
  }
*/
}

// ****************************************************************************
//                               E Mail
// ****************************************************************************
// ============================================================================
//  This is a sample definition for sending E.Mail Notification.
//        To use, the address should be change to E.Mail address where the mail
//        should be sent and the server should be changed to SMTP server IP
//        address and the notification (as well as the references to it) should
//        be uncommented.
// ============================================================================
/*
notification email my_email
{
  from:="OTM_AlarmNotification@company.com";
  address:="name@company.com";
  server:="47.45.8.4";
}
*/

script SampleEMail
{
/*
  function forward_email()
  {
    if ($CurrentTrapSource = "CALL_SERVER")
    {
      // send an email message
      send(my_email,
            $DeviceTime,": Device ",$CurrentTrapSource,
            " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
            " trap with critical severity "," ErrorCode: ", $ErrorCode,
            ", OperatorData: ",$OperatorData, ".");
```

```
    }
  }
  rule forward_email_critical
  {
    if ($NormalizedSeverity = Critical )
    {
      forward_email();
    }
  }
*/
}
// ****************************************************************************
//                              SMS through E Mail
// ****************************************************************************
// ============================================================================
//  This is a sample definition for sending SMS Notification through E-Mail.
//        To use, the address should be change to E.Mail address of the phone
//        where the SMS should be sent and the server should be changed to
//        SMTP server IP address of the Service provider and the notification
//        (as well as the references to it) should be uncommented.
//
//  As there is a limit to the number of characters for SMS, two SMS
//        notifications may be sent for one alarm. The First SMS may contain
//        the other details whereas the second SMS may contain the operator
//        data.
// ============================================================================
/*
notification email my_sms
{
  from:="OTM_AlarmNotification@company.com";
  address:="14165551234@sms.serviceprovider.com";
  server:="47.45.8.4";
}
*/

script SampleSMS
{
/*
  function forward_sms()
  {
    if ($CurrentTrapSource = "CALL_SERVER")
    {
      send(my_sms,
            $DeviceTime,": Device ",$CurrentTrapSource,
            " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
            " trap with critical severity "," ErrorCode: ", $ErrorCode, ".");
      send(my_sms,
            "OperatorData: ",$OperatorData, ".");
    }
  }
  rule forward_sms_critical
  {
    if ($NormalizedSeverity = Critical )
```

```
    {
      forward_sms();
    }
  }
*/
}

//
**********************************************************************************************
*******************
// Forwarding Received Traps as OTM Traps to an Optivity server
//
**********************************************************************************************
*******************

// ============================================
//          Define SNMP Notifications
// ============================================
notification snmp OtmOpenAlarm1 {
   address:="134.177.121.71";
   trap:="6.1";                  // Critical
}
notification snmp OtmOpenAlarm2 {
   address:="134.177.121.71";
   trap:="6.2";                  // Major
}
notification snmp OtmOpenAlarm3 {
   address:="134.177.121.71";
   trap:="6.3";                  // Minor
}
notification snmp OtmOpenAlarm4 {
   address:="134.177.121.71";
   trap:="6.4";                  // Warning
}
notification snmp OtmOpenAlarm5 {
   address:="134.177.121.71";
   trap:="6.5";                  // Info
}
notification snmp OtmOpenAlarm6 {
   address:="134.177.121.71";
   trap:="6.6";                  // Clear
}

//
==============================================================================================
=============
// Forward Alarms Script
//
==============================================================================================
=============

script ForwardAlarms {
```

```
    // ---------------------------------------
    //      Forward Critical Alarms
    // ---------------------------------------
    function forwardCriticals() {
        if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,             // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "Meridian1"
            or $CurrentTrapDevice = "MMCS"
            or $CurrentTrapDevice = "CALL_SERVER" )
         {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    //
System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
```

```
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
            or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or
$CurrentTrapDevice = "MMCS_AP"
            or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice =
"SIGNALLING_SERVER" )
        {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
```

```
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                 // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
           send( OtmOpenAlarm1,
             "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",    0,                  // Alarm's
Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
             "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
              "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
              "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
```

```
            );
        }else{ if ($CurrentTrapDevice = "SL100" ) {
            send( OtmOpenAlarm1,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
            );
        }else{ if ($CurrentTrapDevice = "SRG" or $CurrentTrapDevice = "BCM") {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                     //
Alarm's Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $AlarmCode,           // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                  //
System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,      //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,     //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", "na",                  //
Associated User
```

```
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,         //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                  //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                   //
Problem Isolation Data3
            );
        }}}}}}}
    }

    rule forward_criticals {
        if ( $NormalizedSeverity = Critical ) {
            forwardCriticals();
        }
    }

    // ---------------------------------------
    //         Forward Major Alarms
    // ---------------------------------------
    function forwardMajors() {
        if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,             // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "Meridian1"
            or $CurrentTrapDevice = "MMCS"
            or $CurrentTrapDevice = "CALL_SERVER" )
        {
```

```
            send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    //
System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
            or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or
$CurrentTrapDevice = "MMCS_AP"
            or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice =
"SIGNALLING_SERVER" )
        {
            send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
```

```
                "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                 "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                 "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                 "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
                 "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm2,
                 "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                 "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
                "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error
Code
                "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                 "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
                "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                 "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                 "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                 "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
                 "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
            send( OtmOpenAlarm2,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                   // Alarm's
Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                 "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
                "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
                "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
```

```
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "SL100" ) {
           send( OtmOpenAlarm2,
             "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
             "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
              "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
           );
       }}}}}}
   }

   rule forward_majors {
       if ( $NormalizedSeverity = Major ) {
       forwardMajors();
       }
   }
```

```
    // ---------------------------------------
    //         Forward Minor Alarms
    // ---------------------------------------
    function forwardMinors() {
        if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm3,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "Meridian1"
            or $CurrentTrapDevice = "MMCS"
            or $CurrentTrapDevice = "CALL_SERVER" )
        {
            send( OtmOpenAlarm3,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    //
System
```

```
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
            or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or
$CurrentTrapDevice = "MMCS_AP"
            or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice =
"SIGNALLING_SERVER" )
        {
            send( OtmOpenAlarm3,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm3,
```

```
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
           send( OtmOpenAlarm3,
             "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",    0,                   // Alarm's
Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
             "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
              "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
```

```
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "SL100" ) {
            send( OtmOpenAlarm3,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
            );
        }else{ if ($CurrentTrapDevice = "SRG" or $CurrentTrapDevice = "BCM") {
            send( OtmOpenAlarm3,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                     //
Alarm's Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $AlarmCode,          // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                  //
System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
```

```
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", "na",                    //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,          //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                    //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                     //
Problem Isolation Data3
            );
        }}}}}}}
    }

    rule forward_minors {
        if ( $NormalizedSeverity = Minor ) {
            forwardMinors();
        }
    }

    // ---------------------------------------
    //         Forward Warning Alarms
    // ---------------------------------------
    function forwardWarnings() {
        if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,          //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,            // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                 // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,      //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,     //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,             // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,            //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,         //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,           //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "Meridian1"
            or $CurrentTrapDevice = "MMCS"
```

```
            or $CurrentTrapDevice = "CALL_SERVER" )
        {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    //
System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
            or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or
$CurrentTrapDevice = "MMCS_AP"
            or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice =
"SIGNALLING_SERVER" )
        {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
```

```
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
            send( OtmOpenAlarm4,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",    0,                   // Alarm's
Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
```

```
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,               // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",               // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
           );
        }else{ if ( $CurrentTrapDevice = "SL100" ) {
            send( OtmOpenAlarm4,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,               // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",               // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
           );
      }else{ if ($CurrentTrapDevice = "SRG" or$CurrentTrapDevice = "BCM") {
          send( OtmOpenAlarm4,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    //
Alarm's Seq Number
```

```
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,            // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $AlarmCode,           // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                 // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                   //
System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,       //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,      //
Originating Agent
             "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,             // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", "na",                   //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,          //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                   //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                    //
Problem Isolation Data3
            );
        }}}}}}}
    }

    rule forward_warnings {
        if ( $NormalizedSeverity = Warning ) {
            forwardWarnings();
        }
    }


    // ---------------------------------------
    //         Forward Info Alarms
    // ---------------------------------------
    function forwardInfos() {
        if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm5,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,          //
Alarm's Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,            // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                 // Site
```

```
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,             // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "Meridian1"
           or $CurrentTrapDevice = "MMCS"
           or $CurrentTrapDevice = "CALL_SERVER" )
       {
           send( OtmOpenAlarm5,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
And Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    //
System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
           or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
           or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or
$CurrentTrapDevice = "MMCS_AP"
```

```
            or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice =
"SIGNALLING_SERVER" )
        {
            send( OtmOpenAlarm5,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm5,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 //
Problem Isolation Data2
```

```
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
            send( OtmOpenAlarm5,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
            );
            }else{ if ( $CurrentTrapDevice = "SL100" ) {
            send( OtmOpenAlarm5,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                     // Alarm's
Seq Number
          "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and
Time
           "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
          "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,          // Name Space
           "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error
Code
           "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
           "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
          "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's
Component
           "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
          "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
           "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
          "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem
Isolation Data1
```

```
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem
Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem
Isolation Data3
            );
        }}}}}}
    }

    rule forward_infos {
        if ( $NormalizedSeverity = Info ) {
            forwardInfos();
        }
    }


    // ---------------------------------------
    //         Forward Cleared Alarms
    // ---------------------------------------
    function forwardCleared() {
        if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm6,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,             // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "Meridian1"
            or $CurrentTrapDevice = "MMCS"
            or $CurrentTrapDevice = "CALL_SERVER" )
        {
            send( OtmOpenAlarm6,
```

```
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    //
System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
            or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or
$CurrentTrapDevice = "MMCS_AP"
            or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice =
"SIGNALLING_SERVER" )
        {
            send( OtmOpenAlarm6,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
```

```
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                  //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                   //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
           send( OtmOpenAlarm6,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         //
Alarm's Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
             "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
              "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                  //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                   //
Problem Isolation Data3
           );
       }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
           send( OtmOpenAlarm6,
             "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
              "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
              "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
              "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
             "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
              "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
```

```
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "SL100" ) {
            send( OtmOpenAlarm6,
              "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's
Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date
and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  //
Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name
Space
              "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error
Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
              "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     //
System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   //
Originating Agent
              "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap
Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           //
Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        //
Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                //
Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           //
Problem Isolation Data3
            );
        }}}}}}
    }

    rule forward_Cleared {
        if ( $NormalizedSeverity = Cleared ) {
            forwardCleared();
        }
    }
} // end script ForwardAlarms
```

Sample Alarm Wizard script file

The content of the file *sample_wizard_script.txt* appears below:

```
/*

   This script file was generated using the OTM-M script wizard

   WARNING : DO NOT EDIT THIS FILE MANUALY, THE WIZARD WOULD
   NOT BE ABLE TO HANDLE IT ANY MORE.

*/
///start
/* Global Severity levels definition based on Meridian1 alarms */

counter Undetermined:= 0;
counter Critical := 1;
counter Major    := 2;
counter Minor    := 3;
counter Warning  := 4;
counter Info     := 5;
counter Cleared  := 6;
counter Unknown  := 7;

/* $NormalizedSeverity is a global severity value that is normalized to OTM
severity values.
   It represents the unified value across different devices. */
counter $NormalizedSeverity   := 0;



/* This script assign the global variable $NormalizedSeverity
   with the value of $AlarmServerity when current trap device
   is of OTM type. */

script AssignOTMSeverities when ($CurrentTrapDevice="OTM")
{
   function assignit()
   {
      //send(con, "$AlarmServerity=", $AlarmSeverity);
      if ($Severity=Critical)
      {
         $NormalizedSeverity:=Critical;
      }
      else
      {
         if ($Severity=Major)
         {
```

```
            $NormalizedSeverity:=Major;
        }
        else
        {
            if ($Severity=Minor)
            {
                $NormalizedSeverity:=Minor;
            }
            else
            {
                if ($Severity=Info)
                {
                    $NormalizedSeverity:=Info;
                }
                else
                {
                    if ($Severity=Unknown)
                    {
                        $NormalizedSeverity:=Unknown;
                    }
                    else
                    {
                        if ($Severity=Warning)
                        {
                            $NormalizedSeverity:=Warning;
                        }
                        else
                        {
                            if ($Severity=Cleared)
                            {
                                $NormalizedSeverity:=Cleared;
                            }
                            else
                            {
                                $NormalizedSeverity:=Undetermined;
                            }
                        }
                    }
                }
            }
        }
    }
}

rule assign_severity {
    if ($CurrentTrapDevice="OTM")
    {
        assignit();
```

```
        }
    }

} // end script AssignOTMSeverities

// All MDECT Alarms should be Critical

script AssignMDECTSeverities when ($CurrentTrapDevice = "MDECT")
{
  function assignit()
  {
    $NormalizedSeverity := Critical;
  }

  rule assign_severity
  {
    if ($CurrentTrapDevice = "MDECT")
    {
      assignit();
    }
  }
}


script convertSeverities when ($CurrentTrapDevice != "OTM"
      and $CurrentTrapDevice != "Meridian1"
      and $CurrentTrapDevice != "CALL_SERVER"  and $CurrentTrapDevice != "MMCS"
      and $CurrentTrapDevice != "MDECT")
{
    function convertit()
    {
        //send(con, "$AlarmServerity=", $AlarmSeverity);
        if ($Severity=1)
        {
            $NormalizedSeverity:=Critical;
        }
        else
        {
            if ($Severity=2)
            {
                $NormalizedSeverity:=Major;
            }
            else
            {
                if ($Severity=3)
                {
                    $NormalizedSeverity:=Minor;
                }
```

```
            else
            {
                if ($Severity=4)
                {
                    if ($CurrentTrapDevice="CALL_PILOT")
                    {
                        $NormalizedSeverity:=Info;
                    }
                    else
                    {
                        $NormalizedSeverity:=Warning;
                    }
                }
                else
                {
                    if ($Severity=5)
                    {
                        if ($CurrentTrapDevice="CALL_PILOT")
                        {
                            $NormalizedSeverity:=Unknown;
                        }
                        else
                        {
                            $NormalizedSeverity:=Cleared;
                        }
                    }
                    else
                    {
                        $NormalizedSeverity:=Undetermined;
                    }
                }
            }
        }
    }

  rule severity_conversion
  {
    if ($CurrentTrapDevice != "OTM" and $CurrentTrapDevice != "Meridian1"
          and $CurrentTrapDevice != "CALL_SERVER"
          and $CurrentTrapDevice != "MMCS" and $CurrentTrapDevice != "MDECT" )
    {
      convertit();
    }
  }

} // end script convertSeverities
```

```
script convertM1Severities when ($CurrentTrapDevice="Meridian1" or
$CurrentTrapDevice="CALL_SERVER" or $CurrentTrapDevice="MMCS")
{
    function convertit()
    {
        //send(con, "$AlarmServerity=", $AlarmSeverity);
        if ($Severity=1)
        {
            $NormalizedSeverity:=Minor;
        }
        else
        {
            if ($Severity=2)
            {
                $NormalizedSeverity:=Major;
            }
            else
            {
                if ($Severity=3)
                {
                    $NormalizedSeverity:=Critical;
                }
                else
                {
                    if ($Severity=4)
                    {
                        $NormalizedSeverity:=Unknown;
                    }
                    else
                    {
                        if ($Severity=5)
                        {
                            $NormalizedSeverity:=Warning;
                        }
                        else
                        {
                            if ($Severity=6)
                            {
                                $NormalizedSeverity:=Cleared;
                            }
                            else
                            {
                                if ($Severity=7)
                                {
                                    $NormalizedSeverity:=Undetermined;
                                }
                                else
```

```
                            {
                                $NormalizedSeverity:=Info;
                            }
                        }
                    }
                }
            }
        }
    }

    rule severity_conversion {
        if ($CurrentTrapDevice="Meridian1" or $CurrentTrapDevice="CALL_SERVER" or
$CurrentTrapDevice="MMCS")
        {
            convertit();
        }
    }

} // end script convertM1Severities

//
*************************************************************************************
*******
//                                    Assign $NameSpace
//
*************************************************************************************
*******

counter nsOtm    := 1; // Originated from an OTM
counter nsMeridian1:= 2;
counter nsCallPilot:= 3;
counter nsMeridianMail:= 4;
counter nsSl100  := 5;
counter nsPassport:= 6;
counter nsItg    := 7;
counter nsBravo  := 8;
counter nsIss7   := 9;
counter nsMDECT  := 10;
counter nsCallServer    := 11;
counter nsMediaCard    := 12;
counter nsSigServer:= 13;
counter nsSccs   := 14;
counter nsMeridianMailLink  := 15;
counter nsGenericOrUnknown  := 16;


script assignNameSpace {
```

```
    function ns() {
        if ($CurrentTrapDevice="OTM") {
            // Original $CurrentTrapDevice is retained
        }else{ if ( $CurrentTrapDevice = "Meridian1") {
            $NameSpace := nsMeridian1;
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" ) {
            $NameSpace := nsCallPilot;
        }else{ if ( $CurrentTrapDevice = "MMCS" ) {
            $NameSpace := nsMeridianMail;
        }else{ if ( $CurrentTrapDevice = "ITG"
            or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE"
            or $CurrentTrapDevice = "ITG_IP_PHONE" )
        {
            $NameSpace := nsItg;
        }else{ if ( $CurrentTrapDevice = "BRAVO" ) {
            $NameSpace := nsBravo;
        }else{ if ( $CurrentTrapDevice = "ISS7" ) {
            $NameSpace := nsIss7;
        }else{ if ( $CurrentTrapDevice = "MDECT" ) {
            $NameSpace := nsMDECT;
        }else{ if ( $CurrentTrapDevice = "SCCS" ) {
            $NameSpace := nsSccs;
        }else{ if ( $CurrentTrapDevice = "CALL_SERVER" ) {
            $NameSpace := nsCallServer;
        }else{ if ( $CurrentTrapDevice = "MEDIA_CARD" ) {
            $NameSpace := nsMediaCard;
        }else{ if ( $CurrentTrapDevice = "SIGNALLING_SERVER" ) {
            $NameSpace := nsSigServer;
        }else{
            $NameSpace := nsGenericOrUnknown;
        }}}}}}}}}}}}
    }

    rule ns1 {
        if (1) {
         ns();
        }
    }
}

///end

/* Email notification definition */
  notification email ne_samplemail {
    from:="test@company.com";
    address:="name@company.com";
```

```
    server:="0.0.0.0";
 }

/* Email notification definition */
  notification email ne_serge {
    from:="xyz@company.com";
    address:="serge@company.com";
    server:="15.12.2.3";
 }

/* Email notification definition */
  notification email ne_adrien {
    from:="xyz@company.com";
    address:="x@company.com";
    server:="47.82.32.184";
 }


/* Numeric pager notification definition */
  notification npager nn_samplenpag {
    phone:="9,555-555-5555";
 }


/* Alphanumeric pager notification definition */
  notification apager na_sampleapag {
    phone:="9,555-555-5555";
    pin:="0000";
  }


/* Up-stream manager notification definition */
  notification snmp ns_samplesnmp {
    address:="114.21.25.149";
    trap:="6.10";
  }


/* Modem notification definition */
  notification modem nm_samplemodm {
    phone:="9,555-555-5555";
 }


/* File notification definition */
  notification file nf_samplefile {
    filename:="c:\otm_log.txt";
 }
```

```
/* Script definition */
script GeneratedScript {

  /* Notification Counters definition */
    counter count_ne_samplemail := 0;
    counter count_ne_serge := 0;
    counter count_ne_adrien := 0;
    counter count_nn_samplenpag := 0;
    counter count_na_sampleapag := 0;
    counter count_ns_samplesnmp := 0;
    counter count_ns_samplesnmp_BRAVO := 0;
    counter count_ns_samplesnmp_BS450 := 0;
    counter count_ns_samplesnmp_CALL_PILOT := 0;
    counter count_ns_samplesnmp_ISS7 := 0;
    counter count_ns_samplesnmp_ITG := 0;
    counter count_ns_samplesnmp_ITG_ISDN_TRK := 0;
    counter count_ns_samplesnmp_ITG_IP_LINE := 0;
    counter count_ns_samplesnmp_ITG_IP_PHONE := 0;
    counter count_ns_samplesnmp_MDECT := 0;
    counter count_ns_samplesnmp_Meridian1 := 0;
    counter count_ns_samplesnmp_CALL_SERVER := 0;
    counter count_ns_samplesnmp_MEDIA_CARD := 0;
    counter count_ns_samplesnmp_SIGNALLING_SERVER := 0;
    counter count_ns_samplesnmp_MMAIL := 0;
    counter count_ns_samplesnmp_MMCS := 0;
    counter count_ns_samplesnmp_MMCS_AP := 0;
    counter count_ns_samplesnmp_OTM := 0;
    counter count_ns_samplesnmp_SCCS := 0;
    counter count_ns_samplesnmp_SL100 := 0;
    counter count_nm_samplemodm := 0;
    counter count_nf_samplefile := 0;

  /* Severity levels definitions already defined as global counters */

  /* Function to get Severity level understandable */
    function string AlarmLevelToString (counter level) {
        string result;
        if (level=Minor) {
            result := "Minor";
        } else {
            if (level=Major) {
                result := "Major";
            } else {
                if (level=Critical) {
                    result := "Critical";
```

```
                } else {
                    if (level=Unknown) {
                        result := "Unknown";
                    } else {
                        if (level=Warning) {
                            result := "Warning";
                        } else {
                            if (level=Cleared) {
                                result := "Cleared";
                            } else {
                              if (level=Info) {
                                 result := "Info";
                              } else {
                                  result := "Undetermined";
                              }
                            }
                        }
                    }
                }
            }
        }
        return(result);
    }

  /* Function(s) definition */
    function counter fn_ne_samplemail (counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);
      n:=n+1;
      if (n=3) {
         if (
       (   ($CurrentTrapDevice="SCCS")
       )
             or (($CurrentTrapDevice="CALL_PILOT")
             )
          ) {
         send(ne_samplemail,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap with severity level: ",severity_level,", AlarmCode: ",
$AlarmCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
         else {
          send(ne_samplemail,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
```

```
                    " trap with severity level: ",severity_level,", ErrorCode: ",
$ErrorCode,
                     ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
       }
      return(n);
   }

    function counter fn_ne_serge (counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);
      n:=n+1;
      if (n=2) {
         if (
       (   ($CurrentTrapDevice="SCCS")
       )
             or (($CurrentTrapDevice="CALL_PILOT")
             )
          ) {
         send(ne_serge,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap with severity level: ",severity_level,", AlarmCode: ",
$AlarmCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
         else {
          send(ne_serge,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap with severity level: ",severity_level,", ErrorCode: ",
$ErrorCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
       }
      return(n);
   }

    function counter fn_ne_adrien (counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);
      n:=n+1;
      if (n=1) {
         if (
       (   ($CurrentTrapDevice="SCCS")
```

```
       )
            or (($CurrentTrapDevice="CALL_PILOT")
            )
          ) {
         send(ne_adrien,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap with severity level: ",severity_level,", AlarmCode: ",
$AlarmCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
         else {
          send(ne_adrien,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap with severity level: ",severity_level,", ErrorCode: ",
$ErrorCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
       }
      return(n);
   }

    function counter fn_nn_samplenpag (counter n) {
      n:=n+1;
      if (n=1) {
         send(nn_samplenpag,"12345");
         n:=0;
       }
      return(n);
   }

    function counter fn_na_sampleapag (counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);
      n:=n+1;
      if (n=1) {
         send(na_sampleapag,
                    $CurrentTrapSource," : ",severity_level," ",
                    $CurrentTrapMajor,".",$CurrentTrapMinor);
         n:=0;
       }
      return(n);
   }

    function counter fn_ns_samplesnmp_BRAVO (counter n) {
```

```
    n:=n+1;
    if (n=3) {
       send(ns_samplesnmp,
     "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
     "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
     "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
     "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
     "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
     "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
     "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
     "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
     "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
     "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",    $TrapType,
     "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
     "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
     "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
     "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
       n:=0;
     }
    return(n);
}

 function counter fn_ns_samplesnmp_BS450 (counter n) {
    n:=n+1;
    if (n=3) {
       send(ns_samplesnmp,
         "1.3.6.1.2.1.2.2.1.1.1","Integer",$Port1,
              "1.3.6.1.2.1.2.2.1.1.2","Integer",$Port2,
              "1.3.6.1.2.1.2.2.1.1.3","Integer",$Port3,
              "1.3.6.1.2.1.2.2.1.1.4","Integer",$Port4,
              "1.3.6.1.2.1.2.2.1.1.5","Integer",$Port5,
              "1.3.6.1.2.1.2.2.1.1.6","Integer",$Port6,
              "1.3.6.1.2.1.2.2.1.1.7","Integer",$Port7,
              "1.3.6.1.2.1.2.2.1.1.8","Integer",$Port8,
              "1.3.6.1.2.1.2.2.1.1.9","Integer",$Port9,
              "1.3.6.1.2.1.2.2.1.1.10","Integer",$Port10,
              "1.3.6.1.2.1.2.2.1.1.11","Integer",$Port11,
              "1.3.6.1.2.1.2.2.1.1.12","Integer",$Port12,
              "1.3.6.1.2.1.2.2.1.1.13","Integer",$Port13,
              "1.3.6.1.2.1.2.2.1.1.14","Integer",$Port14,
              "1.3.6.1.2.1.2.2.1.1.15","Integer",$Port15,
              "1.3.6.1.2.1.2.2.1.1.16","Integer",$Port16,
              "1.3.6.1.2.1.2.2.1.1.17","Integer",$Port17,
              "1.3.6.1.2.1.2.2.1.1.18","Integer",$Port18,
              "1.3.6.1.2.1.2.2.1.1.19","Integer",$Port19,
              "1.3.6.1.2.1.2.2.1.1.20","Integer",$Port20,
              "1.3.6.1.2.1.2.2.1.1.21","Integer",$Port21,
              "1.3.6.1.2.1.2.2.1.1.22","Integer",$Port22,
```

```
                "1.3.6.1.2.1.2.2.1.1.23","Integer",$Port23,
                "1.3.6.1.2.1.2.2.1.1.24","Integer",$Port24);
        n:=0;
       }
     return(n);
  }

   function counter fn_ns_samplesnmp_CALL_PILOT (counter n) {
     n:=n+1;
     if (n=3) {
        send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
        n:=0;
       }
     return(n);
  }

   function counter fn_ns_samplesnmp_ISS7 (counter n) {
     n:=n+1;
     if (n=3) {
        send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
```

```
      n:=0;
     }
    return(n);
}

 function counter fn_ns_samplesnmp_ITG (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_ITG_ISDN_TRK (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
```

```
    return(n);
}

 function counter fn_ns_samplesnmp_ITG_IP_LINE (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_ITG_IP_PHONE (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}
```

```
 function counter fn_ns_samplesnmp_MDECT (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
              "1.3.6.1.4.1.1417.1.1.1.5.0",     "OctetString", $DeviceTime,
             "1.3.6.1.4.1.1417.1.1.3.2.1.2.0", "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.3.3.1.4.0", "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.3.3.1.8.0", "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.3.9.0",     "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.3.5.1.0",   "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.3.7.0",     "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.2.1.6.0",   "OctetString", $OperatorData,
             "1.3.6.1.4.1.1417.1.1.3.1.0",     "OctetString", $ErrorCode);
      n:=0;
    }
   return(n);
}function counter fn_ns_samplesnmp_Meridian1 (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",    $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_CALL_SERVER (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
```

```
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
         n:=0;
       }
      return(n);
   }

    function counter fn_ns_samplesnmp_MEDIA_CARD (counter n) {
      n:=n+1;
      if (n=3) {
         send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
         n:=0;
       }
      return(n);
}
}function counter fn_ns_samplesnmp_SIGNALLING_SERVER (counter n) {
      n:=n+1;
      if (n=3) {
         send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
```

```
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_MMAIL (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",    $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,
    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_MMCS (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
```

```
     "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
     "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
     "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
     "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
     "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
       n:=0;
     }
   return(n);
}function counter fn_ns_samplesnmp_MMCS_AP (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
     "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
     "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
     "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
     "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
     "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
     "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
     "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
     "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
     "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
     "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
     "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
     "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
     "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
     "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
       n:=0;
     }
   return(n);
}

 function counter fn_ns_samplesnmp_OTM (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
     "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
     "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
     "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
     "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,
     "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
     "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
     "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
     "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
     "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,
     "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
     "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
     "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
     "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
```

```
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
         n:=0;
       }
      return(n);
   }

    function counter fn_ns_samplesnmp_SCCS (counter n) {
      n:=n+1;
      if (n=3) {
         send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
         n:=0;
       }
      return(n);
   }
function counter fn_ns_samplesnmp_SL100 (counter n) {
      n:=n+1;
      if (n=3) {
         send(ns_samplesnmp,
           "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
                "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
                "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,
            "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",    $TrapType,
            "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,

                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
         n:=0;
```

```
       }
      return(n);
   }

    function counter fn_nm_samplemodm (counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);
      n:=n+1;
      if (n=1) {
         if (
       (   ($CurrentTrapDevice="SCCS")
       )
             or (($CurrentTrapDevice="CALL_PILOT")
             )
          ) {
         send(nm_samplemodm,
                    $DeviceTime,": Device ",$CurrentTrapSource,
" generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap with severity level: ",severity_level,", AlarmCode: ",
$AlarmCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
         else {
          send(nm_samplemodm,
                    $DeviceTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                  " trap with severity level: ",severity_level,", ErrorCode: ",
$ErrorCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
       }
      return(n);
   }

    function counter fn_nf_samplefile (counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);
      n:=n+1;
      if (n=1) {
         if (
       (   ($CurrentTrapDevice="SCCS")
       )
             or (($CurrentTrapDevice="CALL_PILOT")
             )
          ) {
         send(nf_samplefile,
```

```
                    $CurrentPCTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                    " trap at ",$DeviceTime," with severity level:
",severity_level,", AlarmCode: ", $AlarmCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
         else {
          send(nf_samplefile,
                    $CurrentPCTime,": Device ",$CurrentTrapSource,
                    " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                    " trap at ",$DeviceTime," with severity level:
",severity_level,", ErrorCode: ", $ErrorCode,
                    ", OperatorData: ",$OperatorData, ".");
         n:=0;
         }
       }
      return(n);
   }


  /* Rule definition */
    rule r_samplerul2 {
      if (
                (    ($CurrentTrapDevice="ITG")
                )
        ) {
          count_nf_samplefile:=fn_nf_samplefile(count_nf_samplefile);
      }
      else {
      }
    }

  /* Rule definition */
    rule r_simplesamp {
      if (
                (    ($CurrentTrapDevice="Meridian1")
                )
          and (    ($NormalizedSeverity=Critical)
                )
        ) {
          count_ne_adrien:=fn_ne_adrien(count_ne_adrien);
          count_nf_samplefile:=fn_nf_samplefile(count_nf_samplefile);
      }
      else {
      }
    }
```

```
  /* Rule definition */
    rule r_samrulecs {
      if (
                (    ($CurrentTrapDevice="CALL_SERVER")
                )
         ) {
           count_ne_adrien:=fn_ne_adrien(count_ne_adrien);
      }
      else {
      }
    }

} /* End of GeneratedScript script */


/* End of file */
```

Appendix C: Comparison of OTM Windows and OTM web interfaces

You can access OTM using either OTM Windows Navigator or OTM Web Navigator. You can perform many basic configuration and management tasks through either interface. This section describes the similarities and differences between the OTM Windows Navigator and the OTM Web Navigator.

OTM Windows Navigator

OTM Windows Navigator gives you access to OTM-managed systems. Through menus and folders, you can do the following:

- View, configure and administer sites, systems and users.
- Configure and administer OTM services.
- Launch utility applications.
- Display licensing and release information for all installed OTM applications.

The OTM Windows Navigator displays sites and systems in a tree structure. When you choose a system on the tree, you can launch a System window to configure the system and launch management applications. The OTM System Navigator window displays all configured systems. When you select a system, the list of available applications appears in the window. The OTM Windows Navigator system access depends on the privileges assigned to your OTM User Group. For a list of available functions and applications, refer to Table 68.

OTM Web Navigator

The OTM Web Navigator provides a number of the same functions available in the OTM Windows Navigator. The OTM Web Navigator allows you to view sites, systems, and users. The Web Navigator also allows you to configure and administer OTM users. OTM Web security meets the same criteria as provided by the Windows Operating Systems (OS).

One of the advantages of the OTM web interface is the ability for users to configure their telephones through their web browser. As an administrator, using Web Desktop

Services, you can also block end user access to configuration windows. A particularly useful Desktop Services feature is the ability to customize the Help files to suit specific customer needs.

Table 68 compares the functions and applications available in the OTM Windows Navigator with those available in the OTM Web Navigator.

Table 68
Comparing Windows and Web Navigators (Part 1 of 3)

OTM Windows Navigator	OTM Web Navigator
Common Services	
Ability to launch other applications Scheduler Backup & Restore (OTM Data) Import/Export PC Event Log Compact and Repair License management Data Buffering and Access Trap Master Trap Server Related utilities	Ability to link to other websites Event Service System Sanity Terminal Server Trap Master Trap Server
Fault Management	
PC Event Log and Viewer Event Monitor for Meridian 1 and CS 1000S Alarm Banner Alarm notification by: • pager • e-mail • file • SNMP trap forwarder	Alarm Browser (consolidated systems) • view alarms from core Meridian 1, Communication Server 1000, Meridian Mail, ITG, Symposium Call Center Server, and CallPilot.

Table 68
Comparing Windows and Web Navigators (Part 2 of 3)

OTM Windows Navigator	OTM Web Navigator
Configuration Management	
Station Administration Directory Editor LDAP Query utility LDAP Synchronization Corporate Directory Maintenance Windows • real time status of PBX hardware • sorting by type or status • enable, disable, test, and so on ESN ITG Configuration DBA Backup DBA Restore List Manager Inventory	Web Station Administration • Telephone management • Directory Update • Scheduling • End User Access Maintenance Pages • real time status of PBX hardware • sorting by type or status • enable, disable, test, and so on Customizable Web Help LDAP Synchronization Report Directory Update (Global Change) Desktop User Access • finding telephones • viewing set configuration • changing keys and features
Accounting Management	
Telecom Billing System (TBS) • analyzes CDR from multiple switches • predefined reports • customizing of reports General Cost Allocation System (GCAS) Consolidated Reporting System (CRS) Consolidated Call Cost Reports (CCCR) Call Tracking	Telecom Billing Services (TBS) Web Reporting
Performance Management	
Traffic Analysis Call Tracking	

Table 68
Comparing Windows and Web Navigators (Part 3 of 3)

OTM Windows Navigator	OTM Web Navigator
Security Management	
OTM User Template Administration OTM User Management No Access rights: only the site names are displayed Read Only Access rights: all site systems are displayed but some operations are disabled, such as Add, Modify and Change. Read Write Access rights: all site systems and applications are displayed with all available options	Web Navigator Access Security (Local OTM Server) Web Desktop Access Security using Local OTM Server, WinNT Domain, or LDAP account OTM User Management Web Session Monitor No Access rights: site systems are not displayed Read Only Access rights: all site systems are displayed but not the applications Read Write Access rights: all site systems and applications are displayed with all available options
System Access	
Windows System Terminal	Web System Terminal
User Applications	
Windows Help	Web Help End User Desktop Services • viewing set configuration • changing keys and features Telecom Billing System (TBS) Web Reports

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Nortel Communication Server 1000

Optivity Telephony Manager

System Administration

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